

**General Reevaluation Report
and
Environmental Impact Statement**

on

Hurricane Protection and Beach Erosion Control

**WEST ONSLOW BEACH AND NEW RIVER INLET
(TOPSAIL BEACH), NORTH CAROLINA**

Appendix K

Scoping Letters and List of Respondents

Below is a list of agencies/individuals that responded to the NEPA Scoping letter, dated February 14, 2001. Their responses and the NEPA Scoping letter are attached in the same order.

1. U. S. Fish and Wildlife Service, Raleigh Field Office, letter dated 16 March 2001
2. N. C. Department of Cultural Resources, State Historic Preservation Office, letter dated 2 April 2001.
3. N. C. State Clearinghouse, Department of Administration, response dated 19 March 2001
4. PenderWatch & Conservancy, Hampstead, NC, letter dated 13 March 2001
5. N. C. Wildlife Resources Commission, Habitat Conservation Program, letter dated 13 March 2001.
6. N. C. Division of Water Resources, Water Project Section, letter dated 12 March, 2001
7. N. C. Division of Environmental Health, Shellfish Sanitation Section, letter dated 27 February 2001
8. N. C. Division of Environmental Health, Public Health and Pest Management Section, response dated 26 February 2001.
9. N. C. Division of Coastal Management, memorandum dated 23 February 2001
10. N. C. Division of Water Quality, Wilmington Regional Office, response dated 9 March 2001
11. Natural Resources Conservation Service, letter dated 11 February 2002
12. NEPA Scoping letter, letter dated, February 14, 2001



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

March 16, 2001

Mr. W. Eugene Tickner
Deputy District Engineer
Programs and Project Management
U. S. Army Corps of Engineers
P. O. Box 1890
Wilmington, North Carolina 28402-1890

Dear Mr. Tickner:

This letter is a response to your February 14, 2001, request for scoping comments on a review undertaken by the Wilmington District, U. S. Army Corps of Engineers (Corps) for the communities of North Topsail Beach and Surf City, Onslow and Pender Counties, North Carolina, in the interest of shore protection and related purposes. The Corps is also reinitiating studies necessary to prepare a General Reevaluation Report (GRR) for the community of Topsail Beach in Pender County. An earlier Draft Feasibility Report and Environmental Impact Statement (EIS) (U. S. Army Corps of Engineers [hereafter USACOE] 1988) for Topsail Beach presented a selected plan consisting of a dune constructed to 13 feet above mean sea level and a constructed berm 160 feet wide along a main fill length of approximately 1.9 miles. These three communities are located on Topsail Island, a barrier island (Figure 1). These comments are provided in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d) and Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543). This letter does not constitute the report of the Department of the Interior as required by Section 2(b) of the Fish and Wildlife Coordination Act.

A major concern of the Service is that efforts to reduce storm damage to man-made structures may seriously degrade the habitat values provided by beaches and nearshore marine areas. This concern is most acute in regard to the long-term impacts of engineered structures, e.g., seawalls and artificial beach-dune systems, constructed to allow structures and infrastructure to remain in a fixed location. It is now well known that barrier islands move landward in the face of a rising sea level. Storms and a rising sea may move beaches, but these factors do not eliminate beaches in undeveloped areas (see Figure 2). If a commitment is made to hold man-made structures at a fixed location on islands surrounded by a rising sea, it is likely that temporary measures such as an artificial beach-dune system will inevitably be replaced by larger and larger constructed beaches or harder, permanent structures such as a seawall (see Figure 3). While a seawall would protect structures, the habitat values of the natural beach would inevitably disappear.

The Service also has several concerns regarding the periodic construction of an artificial beach-dune system. The recurring removal of large quantities of sand from offshore and nearshore areas is harmful to the organisms that use such areas. The placement of sand on beaches is harmful to the beach invertebrates living on the beaches and the vertebrates that feed on the beach infauna. The turbidity caused by sand placement and the resulting sedimentation are harmful to nearshore organisms and may adversely impact important hardbottom communities.

The Service believes the single most important planning goal for a storm damage reduction project on Topsail Island should be a rigorous adherence to the procedures contained in the National Environmental Policy Act (NEPA). The current planning effort for all of Topsail Island should not accept the plan selected 13 years ago (USACOE 1988) for construction of an artificial berm and dune system at the southern end of the Island, but take a fresh look at the alternatives available today in light of new information on the impacts to the important biological resources in the project area.

The development of feasible alternatives should be based on a thorough consideration of the rise in sea level. Project planning should use the best available information on present rates of global sea level rise and possible increases in the rate of sea level rise. Titus (1990) notes that estimates of global sea level rise in the 1990-2100 period range from two to seven feet, and considers the effects on barrier islands. Hudgens (1999) notes that predictions of relative sea level rise at Hampton Roads, Virginia, between 1990 and 2100 range from 18 to 45 inches and considers possible adaptations to the National Flood Insurance Program. Titus and Narayanan (1995) write that sea level is most likely to rise six to 13 inches in the 1995-2100 period, but there is a ten percent chance that the rise in this period could be 12 inches by 2050 and 26 inches by 2100. While future projections vary, it is clear that the rate of sea level rise is increasing and that projections based on past evidence are not justified. In developing feasible alternatives for storm damage reduction on North Carolina's barrier islands, the issue of future sea level rise should be addressed with an indication of how the efficacy of each alternative would be affected by various elevations of sea level, e.g., 1, 2, and 3 feet by 2050.

The movement and creation of sediment in Onslow Bay, offshore of Topsail Island, should also be considered. Cleary (2001) states that much of the shoreline in southeastern North Carolina is "sediment starved ... [with] little storm protection in place and ... marginal or no potential for locating beachfill quality sand on the shoreface for nourishment programs. As a consequence, major sections of some of the high hazard shoreline reaches will have to be abandoned, as relocation to a nearby site is not an option." Most of the sediments in Onslow Bay are created through bioerosion of offshore hardbottoms of limestone and siltstone (e.g., Riggs et al. 1998). Topsail Island and Onslow Beach are well-known for the extensive rock outcrops offshore, including rock ledges and rubble mounds that can be found in 30 feet of water with up to 15 feet in relief (e.g., Riggs 1994, Riggs et al. 1995). "Morphologically prominent hardbottoms are actively being degraded and retreating in response to intense bioerosion by endolithic bivalves, crustaceans, and worms" (Riggs et al. 1996, p. 844). This bioerosion may develop seafloor relief of millimeters to meters to tens of meters depending on the lithology and bioerosional processes

involved (Riggs et al. 1998). The paucity of sand offshore and underneath the island controls the erosion and accretion patterns and storm response of these communities by making them less flexible to movement and absorption of wave energy (e.g., Riggs 1994, Riggs et al. 1995, Cleary 2001).

Your letter indicates that shore protection alternatives include no action, beach nourishment, and non-structural measures (relocation). The Service recommends two additional approaches that could be used either singularly or in combination. First, modification of existing development and infrastructure. This approach includes retrofitting existing structures to withstand storms, elevating houses, and improved placement of roads and utility lines. Second, improved zoning and land use planning. This second approach would include greater avoidance of hazard areas by development, expanded use of setbacks for structures, and overall lower development density. Both alternatives would significantly reduce storm damage.

Of all the barrier islands in North Carolina, Topsail Island is the most in need of innovative storm damage reduction methods. At least three hurricanes in the last four years have severely affected this island, cutting storm breaches through the island and effortlessly rearranging homes and mobile home parks. Pilkey et al. (1998, p. 171) characterize the island following Hurricane Fran in 1996 as resembling a war zone that had been bombed. The south end of the island was redesigned by natural storm processes (e.g., dunes and vegetation removed). Vacant lots currently exist throughout the island, suggesting that relocation of oceanfront structures as needed over time is feasible. Figure 4 shows that new lots are being sold on the sound-side of the island as overwash nourishes the marshes and creates new upland habitat.

The Service requests that special attention be given to one potential type of relocation. This option would consist of a systematic program to use the uplands created by natural island overwash as relocation sites for threatened, oceanfront structures. The Corps has informed the Service that "many acres of marsh" at Topsail Beach have been buried in sand to the extent that these areas have become uplands suitable for buildings (Figure 4). The Service requests that the alternatives analysis quantify the area of buildable uplands created by the hurricanes in the 1996-1999 period and compare that area to the areal extent of oceanfront land lost to shoreline recession. The alternative analysis could then include a detailed description and analysis of a systematic, long-term program for relocating threatened oceanfront structures to uplands created by natural island overwash.

The Service recommends that the Corps ask the Federal Emergency Management Agency (FEMA) to serve as a cooperating agency for this storm damage reduction project. The FEMA deals with the aftermath of storms and the recovery process. This agency has knowledge of storm damage reduction through its Hazard Mitigation Program and the evaluation of land-use and control measures used to rate communities for the National Flood Insurance Program. The cooperation and input from the FEMA, especially in regard to removing structures in high hazard zones, would be a major step in dispelling the idea that the preferred alternative is biased toward the construction of an artificial beach-dune system.

A significant indirect impact that should be addressed in the EIS is the most likely socioeconomic condition of the project area at the end of the 50-year life of the initial storm damage reduction project. We would hope the EIS should specifically discuss: (1) whether storm damage efforts can be allowed to end after 50 years; (2) if storm damage efforts are forced to end after 50 years, what are the mostly likely consequences for structures on Topsail Island; and (3) if storm damages efforts are continued beyond 50-years which alternative, e.g., beach nourishment, relocating structures, etc., has the best chance of success for an additional 50 years. All the environmental factors should be carefully weighed to determine the alternative with the least overall environmental impacts.

The Service has outlined the direct impacts of a major sand mining-beach construction operation (U. S. Fish and Wildlife Service [hereafter USFWS] 2000, Appendix B) in six tables. The EIS needs to consider the environmental consequences of each direct impact listed in these tables. The Service believes that most, if not all, of these physical changes will adversely impact fish and wildlife resources.

Sand mining is likely to alter the bathymetry and substrate characteristics of offshore borrow areas (USFWS 2000, Appendix B, Table 6), sites of significant microalgal biomass where production is concentrated in the surface layer of bottom sediment. Cahoon and Cooke (1992) state that primary production data from Onslow Bay indicate that the sediment-water interface must be viewed as a dynamic part of continental shelf habitat. Benthic microalgae provide a dependable food source for both benthic deposit feeders and suspension feeders. The physical alterations given by the Service produce both direct and indirect impacts on primary productivity and benthic fauna. The direct environmental consequences of removing benthic microalgae as part of any offshore sand mining should be evaluated. The Service is also concerned that greater depths at offshore borrow areas produced by sand mining will result in reduced primary productivity. Cahoon et al (1990) concluded that the presence of benthic chlorophyll *a* indicated a productive benthic microflora in Onslow Bay. While some benthic primary productive exists across the bay, this work indicates that concentrations of chlorophyll *a* decrease as water depth increases, and thus sand mining that produces permanent pits in offshore areas is likely to lower primary productivity. There is also a reduction in the number of algae species with depth and creating pits by mining sand has the potential to lower species diversity (Schneider 1976 as cited in Cahoon et al. 1990).

According to our information, sediment for a long-term nourishment project anywhere along Topsail Island is limited to non-existent. Cahoon et al. (1990) cite Mearns et al. (1988) as finding that the sediment in Onslow Bay is generally a thin veneer overlaying hard substrates. Backstrom et al. (2001), for example, characterize the shoreface offshore of Surf City as not containing "a significant volume of sand ... [for] a viable borrow site" of nourishment sand within the nearest 75 square kilometers. The offshore seafloor consists of extensive hardbottoms covered with a "patchy, thin veneer of interbedded muddy sands and shell units." Backstrom et al. (2001) estimate that over 3.5 million cubic meters of sand would be needed for an initial beach fill project, a volume not available in the area, and they note that Surf City's "central

location along Topsail Beach and the use of the relatively small bordering ebb deltas further minimizes future nourishment.” These authors suggest that additional development be discouraged.

Sediment placement during the sea turtle nesting season is likely to adversely affect the reproductive success of these federally-listed species. Sand disposal operations conducted during the nesting and hatching season may result in the burial or crushing of nests or hatchlings or loss of sea turtles through disruption of nesting activity. While a nest monitoring and relocation program would likely reduce these impacts, nests may be inadvertently missed or misidentified as false crawls during daily patrols. Nests may be destroyed by operations at night prior to beach patrols being performed. Under the best of conditions, approximately 7 percent of nests are misidentified as false crawls by experienced sea turtle nest surveyors (Schroeder, 1994).

The EIS should discuss the direct impacts of alternatives other than a beach nourishment program. The EIS would be enhanced by a table that compares the direct impacts of all the alternatives developed.

Indirect impacts, also known as secondary impacts, are those that occur in a different location and at a different time from a given action. The Service has listed the indirect, physical impacts associated with a long-term program of beach nourishment (USFWS 2000, Appendix B). As with direct impacts, the alteration or modification of physical characteristics or processes are very likely to adversely impact fish and wildlife resources. The Service recommends that the environmental staff of the Corps consider the environmental pathways between the physical impacts presented and the habitat values of the project area.

One indirect impact of an artificial berm and dune project is sediment starvation of the sound-side shoreline by preventing cross island overwash of sand during storms. Croft and Leonard (2001) state “coastal development, inlet stabilization, and post-storm bulldozing, disrupt the natural processes of marsh accretion by limiting sediment inputs.” All three of these processes already occur on Topsail Island, where both New River and New Topsail Inlets are maintained with navigational dredging and beach bulldozing occurs regularly. Figure 4 illustrates an instance when the natural processes succeeded in nourishing the marsh despite coastal development; the replacement of the bulldozed dune or levee ridge, however, will prevent further nourishment of the marsh until the next large storm. Large-scale nourishment projects that construct and maintain berm and levee systems inhibit this natural process on a grand scale, and such adverse impacts should be addressed.

A major indirect impact of maintaining the island at its present location as sea level rises is the gradual reduction in freshwater supplies to plants and animals (Figure 3). In coastal areas fresh groundwater is found as a lens overlying salt water. The depth to which freshwater extends below sea level in unconfined aquifers is usually estimated to be 40 times the elevation of the water table above mean sea level (Fletcher 1992). As sea level rises the capacity of the freshwater lens is reduced. If the North Carolina barrier islands are held in place and not allowed

to naturally migrate to higher ground as sea level rises, the islands will become similar to ocean coral atolls that cannot migrate. Roy and Connell (1991) have considered the impact of sea level rise on coral atolls. Fletcher (1992) summarizes these concerns by stating:

“As erosion reduces island size, groundwater lens shrink beneath larger islands and nearly disappear beneath smaller ones. Vegetation and island ecosystems become stressed by the decrease in usable water and the ability to support human habitation is reduced. . . . Storm overwashes would increase in frequency, damaging vegetation and coastal development, and increase the salinization of the fresh ground water lens. Conceivably (Roy and Connell 1991), in the next several decades accelerated coastal erosion on the order of 1-2 m/yr, resulting from accelerated sea-level rise, could reduce the dimensions of some presently inhabited islands to the point where their ground water supplies are no longer able to support a viable ecology or permanent human habitation.”

While human habitation of North Carolina barrier islands may not face the same threats as ocean atolls, the communities of plants and animals may be at risk. Human inhabitants are able to bring in freshwater from the mainland and construct artificial barriers to protect structures. However, artificial barriers will not stop the subsurface rise of salt water under the island. In time the shallow freshwater resources on which plants and animals depend may be lost. The 1992 land use plan of Surf City notes that town water is derived from wells supplied by the Castle Haynes limestone aquifer (Surf City 1993). The wells are located about a mile inland because of poor water quality (e.g., iron, chlorides, etc.) in the immediate beach area. The presence of chlorides in water supplies suggests that salt water intrusion is occurring. Development based on the sense of security provided by an artificial beach-dune system would create additional demands on freshwater supplies and wastewater treatment facilities. The future availability of freshwater resources for plant and animal communities under various sea level rise scenarios should be addressed. This would be especially important if efforts to reduce storm damage are based on a plan to hold the island in its present location and prevent natural island migration (Figure 3).

The indirect impacts of removing millions of cubic yards of sand from the seafloor around Topsail Island should also be addressed. Sand removal would create a deeper nearshore environment and allow waves with greater energy to strike the beach. The project EIS should consider the storm damage implications of higher energy waves striking the beach as the offshore area becomes deeper.

The potential for turbidity and sedimentation resulting from sand mining (USFWS 2000, Appendix B, Tables 5 and 6) and beach placement (USFWS 2000, Appendix B, Table 4) may directly harm hardbottoms by covering exposed rock substrate. These types of hardbottoms can support vast macroalgal meadows or no visible biota at all, and are the most abundant type of hardbottom in Onslow Bay (Riggs et al. 1996).

High relief scarped hardbottoms support flourishing reef-fish communities (Riggs et al. 1996). Species diversity and density of infauna and epibenthos increases with the relief of these types of livebottoms.

The availability of specific hardbottoms for development of a benthic community, as well as the structure of that community, are greatly influenced by specific habitat controls including composition, geometry, and morphology (Riggs et al. 1996, p. 844). Surficial sediment patterns control the composition and spatial distribution of benthic communities (Riggs et al. 1998). Thus any project that could remove or add to the surface sediments via dredging and filling will influence the availability of the hardbottom habitats, their benthic communities and the structure of those communities. The Corps has stated that “[B]orrow sites designated solely for nourishment can experience the greatest impact if the borrow activity affects hard bottom communities, or there is a change in sediment composition” (Yelverton 2001). Thus long-term beach construction along this island would affect sensitive hardbottoms and introduce a different sediment composition (quartz sand as opposed to carbonate, silty or rock fragmented material) to the nearshore system. 7

The addition of millions of cubic yards of sediment from beach fill projects poses a significant threat to the sensitive nearshore habitats. Thieler et al. (1995) documented that sediment moves from Wrightsville Beach offshore to at least 17 meters (56 feet) water depth. Approximately 2 million cubic meters (2.6 million cubic yards), or one-fourth, of the nourishment sediment for Wrightsville Beach has accumulated on the lower shoreface and inner shelf in water depths exceeding 9 meters (29 feet) (Thieler et al. 2001). Riggs (1994) states that nourishment sediment has buried hardbottoms off Wrightsville Beach, Carolina Beach and Kure Beach, taking these reefs “out of production” for aquatic resources. A water depth of 9 to 28 meters (29-92 ft) is traditionally not considered to have significant sediment movement in a coastal engineering sense, but this research shows that it does have a significant impact in an ecological sense. Riggs (1994) expresses concern that a beach construction project on Topsail Island could harm offshore hardbottoms. The Corps GRR, feasibility report and EIS should fully consider the adverse impacts that sedimentation due to either dredging or sand placement could have on the highly productive hardbottom communities of Onslow Bay and the fisheries resources that they support.

The long-term adverse impacts on populations of beach macroinvertebrates should be considered in the evaluation of all project alternatives. An earlier planning document (USACOE 1988, p. eis-1-5) states that no long term impacts on beach infauna would occur. This assessment considered a main beachfill of approximately 1.9 miles, and not the approximately 17-18 miles currently under consideration. Smaller linear distances of beach construction allow for greater recruitment from undisturbed adjacent beaches. If beaches receive new sediment every three years, there is a question as whether some areas of the artificial beach will be repopulated at all or ultimately have a greatly reduce invertebrate population. Any determination that a 50-year program of sand disposal for beach construction can be completed without harm to beach invertebrates should be supported with references to the life cycles of these organisms, the timing

of future sand placements, and the direction of the longshore current in relation to adjacent undisturbed beaches.

Project planning should evaluate the ways in which each alternative would influence future development in the project area. For example, a beach nourishment project aimed at providing storm surge protection for hurricanes in categories 1-3 may provide a sense of security that leads to additional development of more and larger structures. All the additional development would be vulnerable to the storm surge of a hurricane in categories 4-5. If the project is designed to protect against hurricanes in categories 1-3, the EIS should clearly describe the socioeconomic impacts associated with the landfall of a major storm, such as a category 5 hurricane, for which protection is not intended.

The species protected by the ESA that are most likely to be affected on Topsail Island include the loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas*), piping plover (*Charadrius melodus*), and seabeach amaranth (*Amaranthus pumilis*). The two sea turtles and the piping plover were the subject of a December 29, 1989, Biological Opinion for the West Onslow Beach and New River Inlet Project.

All five Atlantic sea turtles are protected by the ESA and may occur in the coastal waters of North Carolina. In addition to the threatened loggerhead and green sea turtles, offshore water may be used by federally endangered Kemp's ridley (*Lepidochelys kempi*), hawksbill (*Eretmochelys imbricata*), and leatherback (*Dermochelys coriacea*) sea turtles. Any consideration of sand placement during the sea turtle nesting and incubation period, May 1 through November 15, should include measures to minimize adverse impacts on sea turtle reproduction. Measures to relocate sea turtle nests should discuss the area to which nest would be relocated and the physical differences, e.g., sand grain size, sand color, moisture availability, between the natural nest site and the relocation nest site.

Piping plovers use the project area for nesting, migration, and overwintering (U. S. Fish and Wildlife Service [hereafter USFWS] 1989, p. 23). Nesting piping plovers within the project area are part of the Atlantic Coast population, and are federally listed as threatened. Piping plovers nest above the high tide line on coastal beaches; on sandflats at the ends of sandspits and barrier islands; on gently sloping foredunes; in blowout areas behind primary dunes (overwashes); in sparsely vegetated dunes; and in overwash areas cut into or between dunes. The species requires broad, open, sand flats for feeding, and undisturbed flats with low dunes and sparse dune grasses for nesting. Piping plovers from the Federally endangered Great Lakes population as well as birds from the threatened populations of the Atlantic Coast and Northern Great Plains overwinter on North Carolina beaches. Project planning must consider the manner and extent to which each alternative would impact the primary constituent elements of plover overwintering habitat.

Seabeach amaranth, an annual plant, exists adjacent to inlets, along beaches between dunes and the high tide line, and in areas of extreme overwash. The plant helps to trap sand and build dunes. The species is listed as threatened by both the federal government and the State of North

Carolina. Suitable habitat for this plant occurs in the project area. The Service reported that 50 plants were found during a survey of the south end of Topsail Island during the late 1980s (USFWS 1989, p. 26). Service records contain a letter from the Corps dated February 22, 1993, that reports survey data for seabeach amaranth on Topsail Beach during 1992. This survey reported 22,410 plants on Topsail Beach. Therefore, project planning should consider potential impacts of the various alternatives on this species.

The lack of offshore sand may lead to a consideration of sand mining at inlets and estuarine areas. In the mid-1980s planning for berm construction along the southern part of Topsail Beach included excavation of material from estuarine areas in Banks Channel. Sand mining at inlet and estuarine bottoms, especially areas with submerged aquatic vegetation, during the warmer months of the year would pose a risk to the federally endangered West Indian manatee (*Trichechus manatus*), also known as the Florida manatee. Numbers of manatee sightings are very low, but they do occur along the southern coast of North Carolina (Schwartz 1995). Such mining poses a risk to other protected marine mammals. If such areas are considered as possible mining sites, the Corps should assess potential impacts to the marine mammals and fisheries resources that pass through the inlet and/or use estuarine habitats in the project area.

If the Corps determines that the preferred alternative may affect federally-listed species, consultation with the Service must be initiated. Marine mammals, such as whales, seals, porpoises, and dolphins, are under the jurisdiction of the National Marine Fisheries Service and that agency should be contacted regarding these animals.

In addition to federally species, Corps planning should also consider impacts to state protected species. The North Carolina Natural Heritage Program (NCNHP) has a web page (<http://www.ncsparks.net/nhp>) that provides information on state-listed species by topographic quad. Most of the project area falls within three quads: New River Inlet, Holly Ridge, and Spicer Bay. The table below gives four species of birds and two species of reptiles that occupy habitats occurring in the project area. These species have special status in North Carolina. The Service will address potential impacts to these species in our Fish and Wildlife Coordination Act Report. However, the Corps may also consider potential impacts during early project planning.

Common Name	Scientific Name	North Carolina Status	General Habitat
Birds			
Bachman's sparrow	<i>Aimophila aestivalis</i>	Special Concern	open pine woods with undergrowth of bushes and grass
Black skimmer	<i>Rynchops niger</i>	Special Concern	beaches
Gull-billed tern	<i>Sterna nilotica</i>	Threatened	marshes, fields, coastal bays
Eastern painted bunting	<i>Passerina ciris ciris</i>	Significantly Rare	maritime shrub thicket
Reptiles			
American alligator	<i>Alligator mississippiensis</i>	Threatened	brackish waters and marshes
Carolina Diamondback Terrapin	<i>Malaclemys terrapin centrata</i>	Special Concern	coastal marsh, tidal flats, brackish waters

The Service has outlined the cumulative physical impacts of the beach nourishment option that may degrade habitat for fish and wildlife resources (USFWS 2000, Appendix B, Tables 1-6). We encourage the Corps to address these impacts in the context of both ongoing and future beach nourishment programs within North Carolina. The Service also recommends that the project EIS consider any cumulative impacts associated with statewide removal of threatened structures, improved construction standards, and zoning restrictions that would reduce the vulnerability of structures to coastal storms. In regard to storm damage reduction projects, the Service recommends that North Carolina be considered the geographic area and the time frame be 50 years, the customary official planning life of federal beach nourishment projects.

Topsail Island already has active beach disposal of navigational dredge spoil (Fig. 1) at both Topsail Beach and North Topsail Beach. Beach scraping or bulldozing occurs on an annual basis and artificial levees are reconstructed after every storm event. Some structures are protected by sandbags. Over 1300 permits have been issued by the Corps for beach scraping and sandbag revetments in North Carolina since 1980 (J. Richter, pers. comm., February 2001). Federal, local and private beach nourishment projects are proposed or ongoing for over half of the North

Carolina shoreline, more than double the proportion of any other state in the southeast (USFWS, unpub. data). The hardbottoms of Onslow Bay have already been adversely impacted by nourishment projects at Wrightsville, Carolina and Kure Beaches. Projects proposed or ongoing at Figure Eight Island, Onslow Beach, and Bogue Banks will further increase the proportion of Onslow Bay coastline artificially manipulated and maintained. Thus the impacts of these proposed projects on Topsail Island pose a cumulative threat to the Onslow Bay coastal and marine ecosystems.

One approach to cumulative impacts analysis is the preparation of an area-wide or programmatic EIS. Such a comprehensive document is particularly useful when similar actions, viewed with other reasonably foreseeable or proposed agency actions, share common timing or geography. The many projects in North Carolina that involve the dredging of sand from offshore, nearshore, and inlets for placement on developed beaches share many important geological and biological characteristics. For these projects that gradually affect a greater proportion of beaches and offshore areas in North Carolina, an overview or area-wide EIS would serve as a valuable analysis of the affected environment and the potential cumulative impacts of reasonably foreseeable actions for storm damage reduction within the state.

The Service requests that the Corps prepare a programmatic EIS for its civil works and regulatory activities along the North Carolina coast prior to proceeding with the development of specific project plans at Topsail Island, Bogue Banks, Dare County Beaches South (Hatteras and Ocracoke Islands Portion), and Brunswick County Beaches (Caswell Beach, Oak Island and Holden Beach Portion). Such a comprehensive effort would yield a coastal management strategy that identifies areas where socioeconomic resources support shoreline stabilization and those where ecological resources support no such activities. The Service would be willing to partner with the Corps in this endeavor.

Overall, the Service requests that planning for storm damage reduction on Topsail Island have a clear, logical path from the project need to the selection of the preferred alternative. The Service also requests that the Corps hold an interagency scoping meeting and interagency planning meetings and for this project. These meetings would allow a full and open dialogue between all of the planning partners and sponsors and allow issues to be addressed early in the planning process rather than creating obstacles at a later date. These meeting should be initiated while alternatives are being developed. At these meetings all affected agencies could discuss information on the value of property to be protected, offshore sand resources, potential areas for sand mining, and details of a phased program of structural relocation. In addition to state and federal resource agencies, the FEMA and North Carolina Department of Emergency Management should attend and present their perspectives on the extent to which the various alternatives would reduce storm damage.

The Service appreciates the opportunity to provide these comments and we look forward to continued involvement with the Corps on this project. Please keep this office informed on progress in the planning process. General questions or comments should be directed to Howard

Hall at 919-856-4520, ext 27, or by e-mail at <howard_hall@fws.gov>. Specific questions regarding the physical environment and impacts of various alternatives may be directed to Ms. Tracy Rice at ext. 12 or at <tracy_rice@fws.gov>.

Sincerely,



Garland B. Pardue
Ecological Services Supervisor

FWS/R4/HHall/March 16, 2001/919-856-4520, ext. 27/C:TB_Scop301fin.wpd

cc:

Bruce Bell, USFWS, Atlanta, GA
Gerald Miller, US EPA, Atlanta, GA
Larry Hardy, NMFS, Beaufort, NC
William Straw, FEMA, Atlanta, GA
Steve Benton, NC Division of Coastal Management, Raleigh, NC
Charles Jones, NC Division of Coastal Management, Raleigh, NC
Preston Pate, NC Division of Marine Fisheries, Morehead City, NC
Frank McBride, NC Wildlife Resources Commission, Raleigh, NC
David Allen, NC Wildlife Resources Commission, Trenton, NC
Joanne Steenhuis, NC Division of Water Quality, Wilmington, NC
Gavin Smith, NC Division of Emergency Management, Raleigh, NC

Literature Cited:

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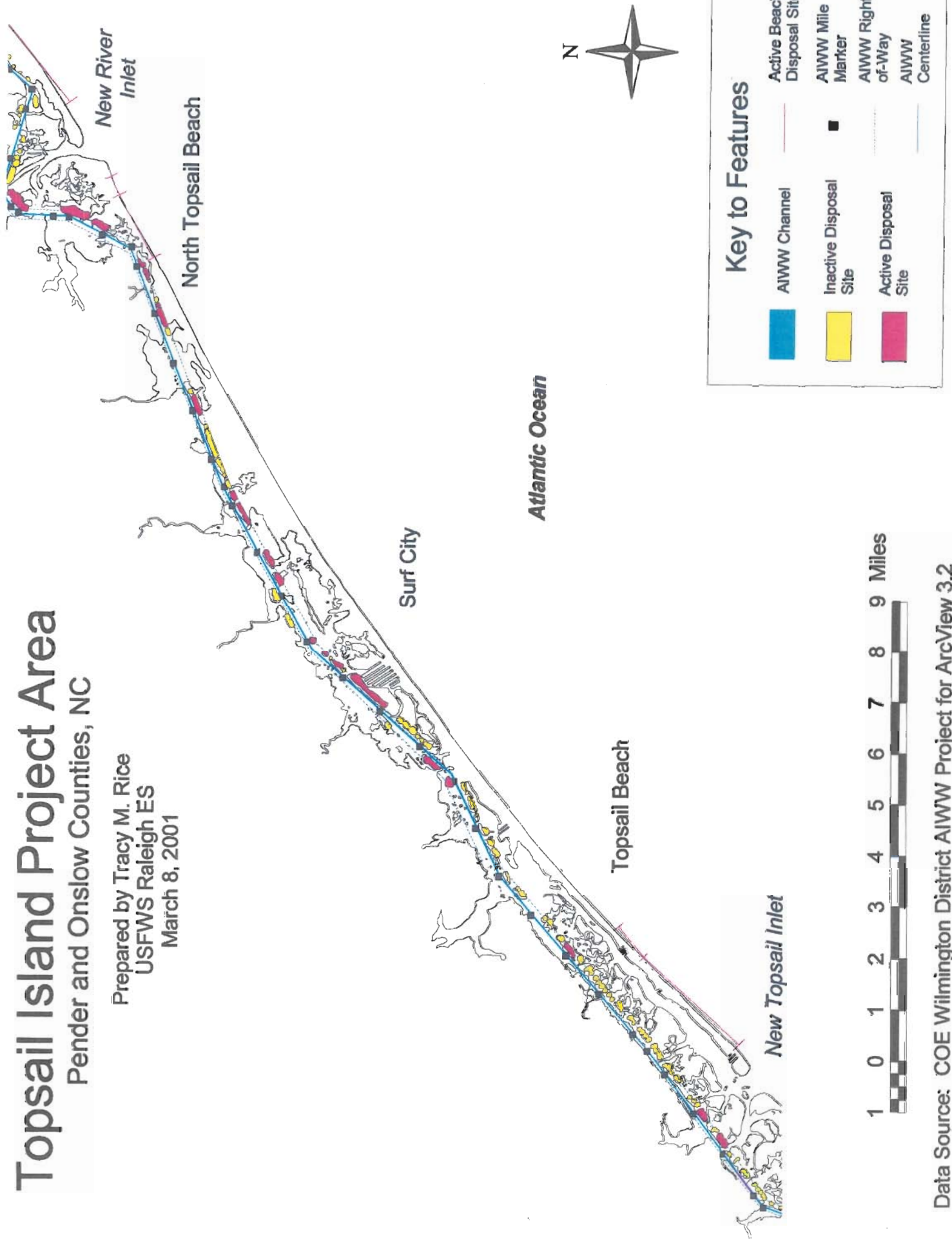
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Topsail Island Project Area

Pender and Onslow Counties, NC

Prepared by Tracy M. Rice
 USFWS Raleigh ES
 March 8, 2001



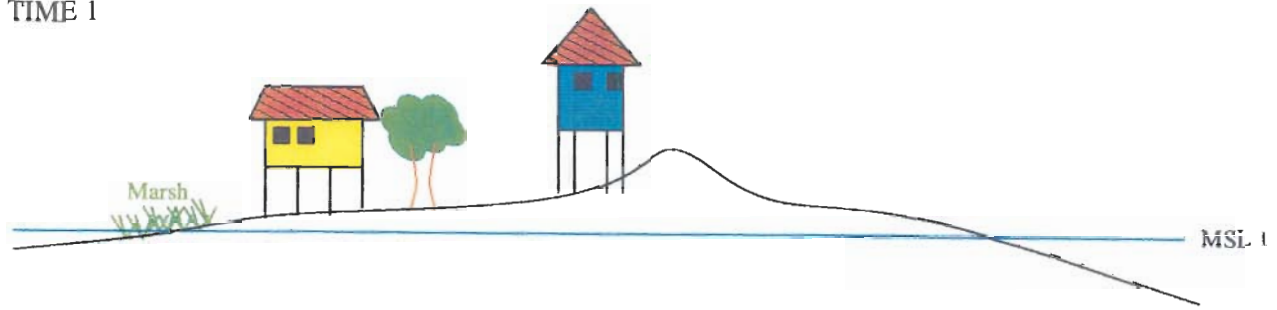
Key to Features

	AIWW Channel		Active Beach Disposal Site
	Inactive Disposal Site		AIWW Mile Marker
	Active Disposal Site		AIWW Right-of-Way
			AIWW Centerline

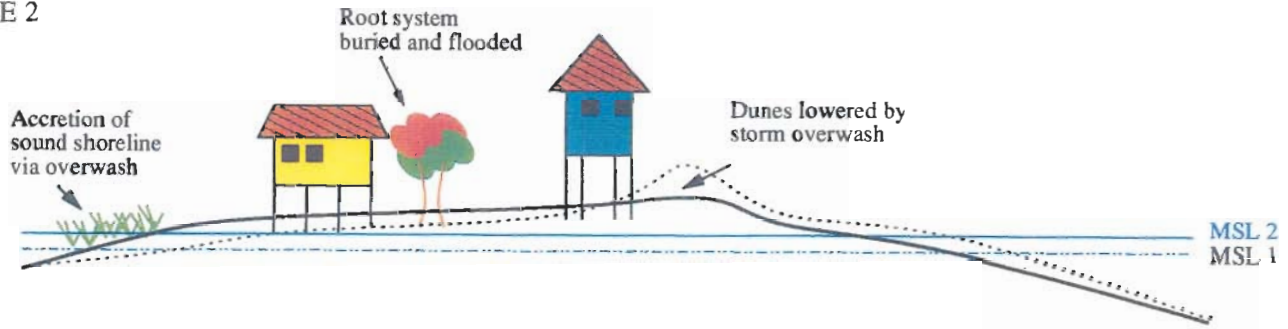
Data Source: COE Wilmington District AIWW Project for ArcView 3.2

Figure 1

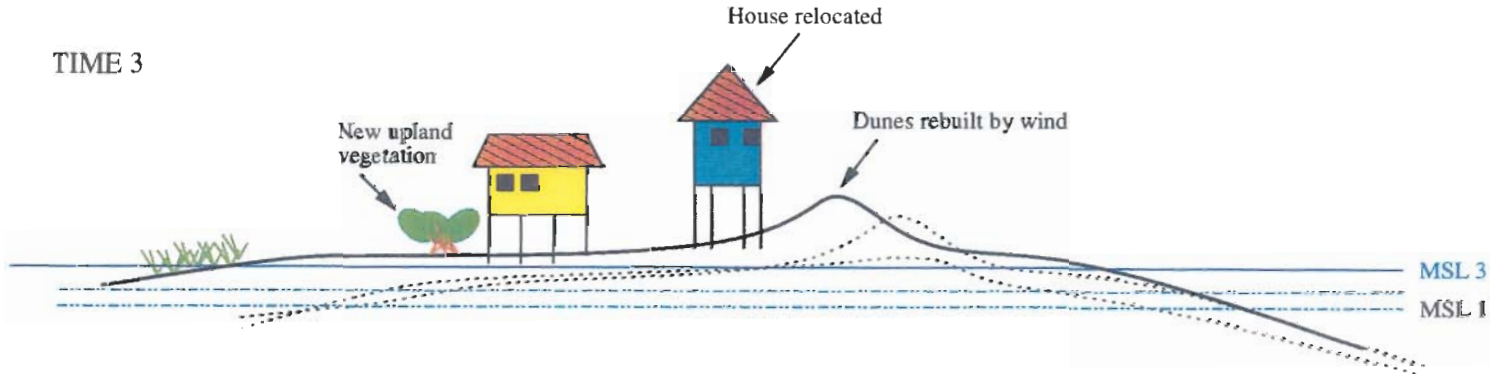
TIME 1



TIME 2



TIME 3



TIME 4

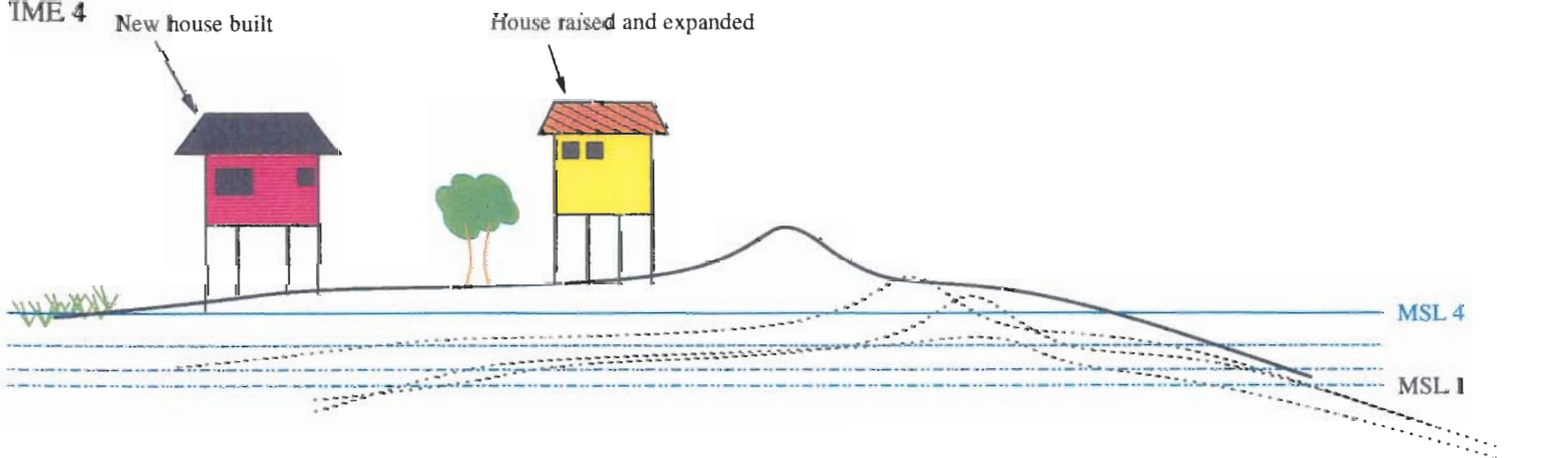


Figure 2. Barrier island migration during a period when sea level is rising at an accelerating rate. Habitat types shift landward (to the left) with the island, but are not permanently lost. Development can be relocated from the ocean-front to the soundside over time.

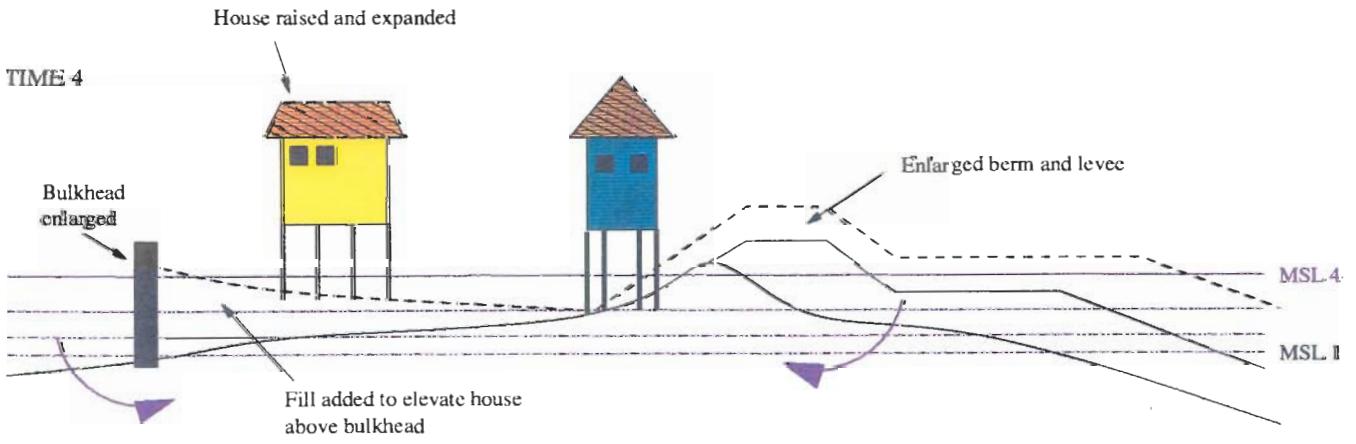
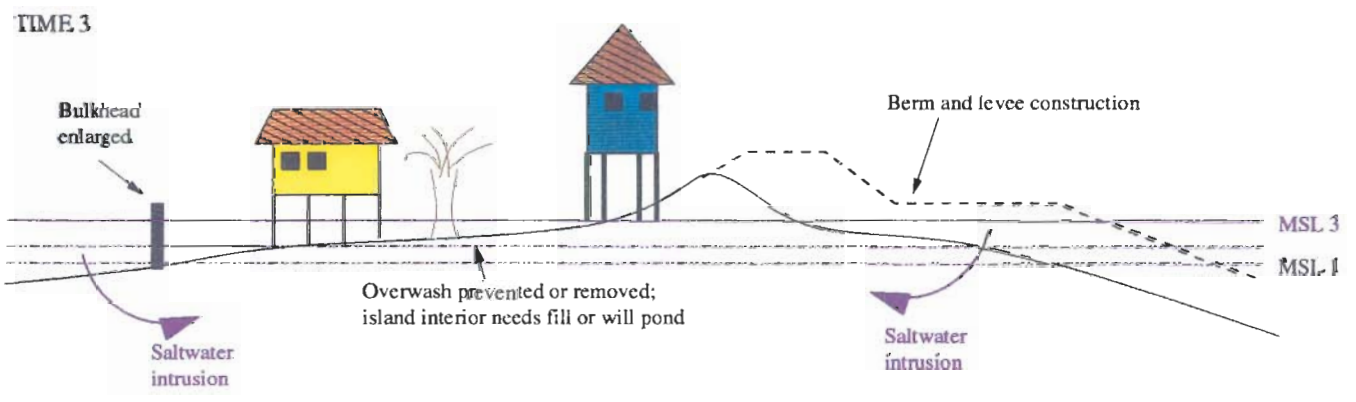
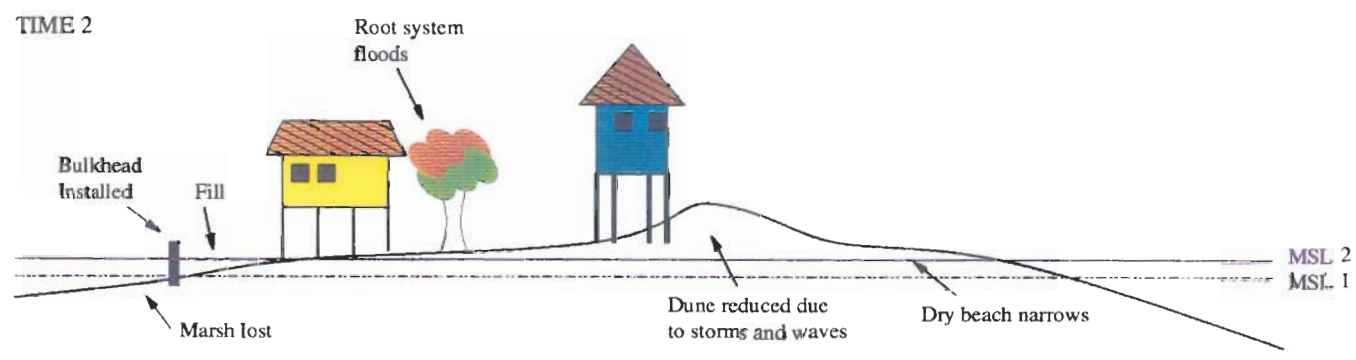
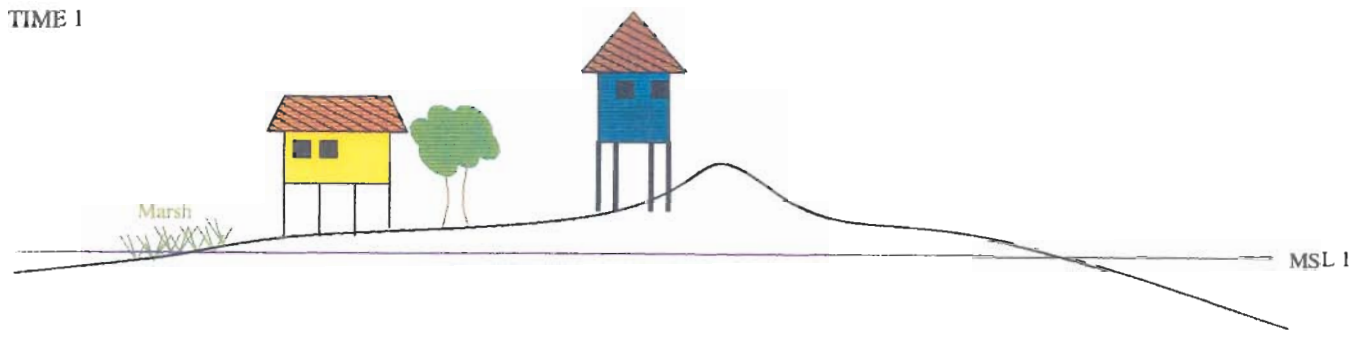


Figure 3. Evolution of a barrier island during a period when sea level is rising at an accelerating rate and the shorelines are stabilized. Habitats are modified and lost, saltwater intrudes on the freshwater table, and a circle of "dikes" replaces island migration processes.

Figure 4. Storm overwash of sand has naturally nourished the sound-side marshes of North Topsail Beach (top), creating new upland habitat that is now listed for sale and development (bottom). Photographs taken February 14, 2001 by U.S. Fish and Wildlife Service.





**North Carolina Department of Cultural Resources
State Historic Preservation Office**

David L. S. Brook, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

April 2, 2001

Glenn McIntosh
U.S. Army Corps of Engineers
Wilmington District
PO Box 1890
Wilmington, NC 28402-1890

Re: Shore protection activities, Surf City and North Topsail, between New Topsail Inlet and New River Inlet, Pender & Onslow Counties, CH 01-E-0000-0497

Dear Mr. McIntosh:

We have received notification from the State Clearinghouse concerning the above mentioned study area. We would like to take this opportunity to comment.

The shore protection activities, especially beach bulldozing operations involved with re-nourishment, may encounter the remains of vessels lost along the on the beach between New Topsail Inlet and New River Inlet and buried over the last 450 years.

There is one known beach wreck (0001NTB) located within the study area that should be avoided. Our underwater research files also indicate at least five known ship losses between the two inlets.

While the archaeological and historical record does not support a recommendation for a comprehensive archaeological survey, all involved parties should be aware that the possibility that this work may unearth a beached shipwreck. If such an event occurs, work should move to another area and the Underwater Archaeology Branch contacted immediately (910/458-9042). A staff member will be sent to make an assessment of the wreckage and determine the proper course of action. Any questions regarding the wreck 0001NTB can be directed to the Underwater Archaeology Branch (910/458-9042).

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

	Location	Mailing Address	Telephone/Fax
Administration	507 N. Blount St, Raleigh, NC	4617 Mail Service Center, Raleigh 27699-4617	(919) 733-4763 • 733-8653
Restoration	515 N. Blount St, Raleigh, NC	4613 Mail Service Center, Raleigh 27699-4613	(919) 733-6547 • 715-4801
Survey & Planning	515 N. Blount St, Raleigh, NC	4618 Mail Service Center, Raleigh 27699-4618	(919) 733-4763 • 715-4801

Page 2
Glenn McIntosh
March 27, 2001

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, Environmental Review Coordinator, at 919/733-4763.

Sincerely,



 David Brook
Deputy State Historic Preservation Officer

DB:kgc

cc: State Clearinghouse

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

STATE NUMBER: 01-E-0000-0497
DATE RECEIVED: 02/14/2001
AGENCY RESPONSE: 03/09/2001
REVIEW CLOSED: 03/14/2001

H05

MS RENEE GLEDHILL-EARLEY
CLEARINGHOUSE COORD
DEPT OF CUL RESOURCES
ARCHIVES-HISTORY BLDG - MSC 4617
RALEIGH NC

RECEIVED
FEB 19 2001

REVIEW DISTRIBUTION
CAPE FEAR COG
DEHNR - COASTAL MGT
DENR LEGISLATIVE AFFAIRS
DEPT OF CUL RESOURCES
EASTERN CAROLINA COUNCIL

HISTORIC PRESERVATION OFFICE

zm 3/5
CS 2/27/01
AM
see letter

PROJECT INFORMATION

APPLICANT: Dept. of the Army Corps of Engineers

TYPE: National Environmental Policy Act

ERD: Scoping

DESC: Proposal to Determine Necessary Actions Relative to Shore Protection Activities
for Surf City and North Topsail Beach in Pender and Onslow Counties

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date. If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:

- NO COMMENT
 COMMENTS ATTACHED

SIGNED BY:


Renee Gledhill-Earley

DATE:

3/26/01



PenderWatch & Conservancy

P.O. Box 662  Hampstead, NC 28443

March 13, 2001

Mr. Glenn McIntosh
U.S. Army Corps of Engineers
Wilmington District
Post Office Box 1890
Wilmington, North Carolina 28402-1890

Dear Mr. McIntosh,

PenderWatch & Conservancy (PW&C) thanks you for providing a copy of the scoping letter (Feb 14, 2001) regarding shore protection for Surf City and North Topsail Beach in Pender and Onslow Counties. PW&C is a Pender County group concerned with the environment and quality of life in Pender County.

Beach renourishment is, and will continue to be, a difficult public policy issue in this community. In the latest issue of our newsletter a guest columnist suggested an approach to the renourishment dilemma. I enclose the article (Todd Miller's essay on p. 4 of the enclosed newsletter). PW&C endorses these guidelines. This letter and Mr. Miller's article will serve as our comment on your scoping notice.

Please place this statement in your record. Also please send us copies of all official actions regarding this proposed project.

Sincerely,

Burt Millette,
President PenderWatch and Conservancy

Cc: North Carolina Coastal Federation





PENDERWATCH

If you are not recycling you are throwing it all away

February, 2001

From the President



Burt Millette

It is an honor to be selected to serve as PW&C President for the year 2001, which incidentally is the fifteenth anniversary of the organization. During this time PW&C has grown to its present level of about 300 dedicated members. One of the goals during the upcoming year will be to both increase the membership and to obtain

greater participation from existing members in PW&C affairs. A little help from members will ease the burden on our hard-working Board of Directors. Your ideas and suggestions are always welcome. Come to a Board meeting (every 2nd Wednesday, 9:00 A.M., at the Hampstead library) or call a Board member with your thoughts. Following Dave Richie in the President's role will be difficult. As President, Dave was dedicated, knowledgeable in environmental affairs and unselfish with his time. He inspired others to get the job done. Fortunately, Dave will stay on the Board and, as evidenced by his message, will continue to be active in PW&C.

From the Past President

Dave Richie

Over sixty PenderWatch and Conservancy members and friends enjoyed a fascinating presentation at our annual meeting, January 17, by Andy Wood, now the Education Coordinator for North Carolina Audubon Society. Andy was supported by some wonderful slides taken by Walker Golder, our originally scheduled

speaker, and shared his abundant knowledge about the birds and "critters" that inhabit Lea Island.

Audubon North Carolina will be managing Lea Island primarily to protect nesting birds, while allowing existing recreational activities to continue. They hope to have a resident warden by this summer and expect to have a role for volunteers. Let me know if you are interested. 270-4751.

Andy's talk inspired me to revisit the Holly Shelter sites he interpreted so memorably on our Earth Day trip last April. I was surprised to find Lodge Road in excellent condition, providing access to a wealth of places to walk and explore. The gate in north Hampstead, just beyond the Topsail Baptist Church, will remain open through April. Hunting days are Monday, Wednesday, and Saturday. It is a peaceful, lovely place to be the other four days of the week.

My walk in Holly Shelter reawakened an earlier ambition. If there is enough interest, I would be willing to help organize an informal Friends of Holly Shelter. The main idea would be to share nature-oriented experiences—bird and flower walks, for example. The project could grow into a cooperative, supportive relationship with the Wildlife Resources Commission staff that manages Holly Shelter. There is an evident need for litter pick-up along the roads (not bad, actually, just distracting) and there may be an opportunity to locate a few trails to make it easier to access off-road areas of interest. If you are a potential member of such a group, please call me.

There is one more possible activity I would be willing to help organize. Some of you, I know, are interested in local history, including tangible remnants of earlier human activity. My interest was sparked by an earthen dam near our home that pre-dates the Civil War, and has grown to include traces of old roads in our neighborhood, an old cemetery near Country Club Road and what's left of the railroad right-of-way. It could be

fun to assemble bits and pieces of local history and meet from time to time to share what we learn. Please let me know if you would like to be included.

As many of you know, I have been appointed to the Pender County Planning Board and will now be an advocate for good planning and environmental protection from a different vantage point. It has been a privilege to serve you as President for the last two years.

Long Range Planning Proposal

The Long Range Planning Committee submitted their Growth Management Plan to the Pender County Board of Commissioners. This plan was completed after a year of research and meetings. The committee was formed in order to manage the rapid growth that has occurred in Pender County over the past decade. A panel of fifteen volunteers from around the county was formed to develop a cross section of ideas. Harbeck Associates was also brought to the board as a consultant.

The plan developed by the committee is a document called "Pender 2020, Pender County Growth Management Plan".

The people of Pender County drive this plan. The plan consists of twenty different policies which are broken into three different sections as follows:

Section 1 outlines the history of the project and listed policies, which are the principals, set down for growth management.

These policies include sections and categories for policy recommendation. These are protection for primary nursery areas, controlling stormwater runoff, supporting vegetation buffers, controlling development, flood prevention, planning road projects, developing a master drainage plan and limiting septic tanks in flood plains. These policies are designed to last for 10 years but should be looked at every 5 years.

Section 2 of the plan is the narrative. It explains why each one of the policies is put in place.

Section 3 is a list of twenty goals the committee felt the county should address first.

These can be checked off once they are done. Some of these include preserving agricultural areas, establishing stricter estuarine standards, limiting the use of personal watercraft, preserving state game lands and Moores Creek National Battlefield, monitoring the Cape Fear Basin and ground water quality, looking at options for water and sewer, the use of hydric soil

definitions to limit development, promoting buffers, tightening mobile home storage, and enforcing sign regulations.

This plan serves as a guidance policy for the most appropriate use of property. It will make development easier and more predictable. The Committee feels it has developed a good plan that will work.

Commissioners are currently reviewing the plan and will hold public hearings on it.

Copies of the plan are on display at both the Hampstead and Burgaw libraries and at the County Planning office in Burgaw.

PenderWatch Hosts Coastal Caucus

On Tuesday, January 9, PW&C hosted the bimonthly meeting of the Coastal Caucus at the Manor in Olde Point.

The Coastal Caucus is made up of organizations similar in many respects to PenderWatch and shares many of our goals for planned growth and environmental protection.

The Coastal Caucus grew from several meetings organized by the North Carolina Coastal Federation (NCCF) for environmental groups in southeastern North Carolina to stop the loss of thousands of acres of wetlands in our area due to illegal ditching and draining.

PenderWatch was involved in those earlier meetings along with the Coastal Federation, Carteret County Crossroads, Brunswick Environmental Action Team, Cape Fear River Watch, The Southern Environmental Law Center, and interested individuals. This group involved the Environmental Protection Agency, initiated legal action to successfully stop the illegal ditching, and caused much of the ditching to be restored.

From that early beginning, the groups involved believed we could accomplish much more if we worked together on problems we shared in common. Those involved asked the NCCF to take on the task of organizing the initial meetings of groups the Coastal Federation thought would add to the organization. They agreed, and the Caucus was formed.

Representatives from eight groups including NCCF, Carteret County Crossroads, Brunswick Environmental Action Team, ConNet, SBT, New River Foundation, Concerned Citizens of Southeastern NC and PenderWatch, and invited individuals attended the meeting at Olde Point. The items discussed included the proposed CAMA land use planning rules, stormwater rules, beach renourishment, and suspected pollution

from forestry activities in the Green Swamp area. Priorities were set for a planned meeting in 2001.

The participants were so impressed by the central location of Hampstead as a meeting place and the amenities provide by the Manor at Olde Point that PenderWatch was drafted to host the next meeting planned for March. We look forward to the opportunity.

Adopt-A-Highway

PW&C continues its efforts to make our environs a better place.

Since the last newsletter we conducted two pick-ups. Eleven volunteers picked up Highway 17 on Thursday, October 19. Many thanks to **Bob Julius, Bob Wilfong, Lou Garrard, Clem and Marjorie Bribitzer, Terry and Fred Bender, Margaret and Raymond Rose, Phyllis Powder and Elsa O'Connor**. We picked up 20 bags of trash and 1 bag of aluminum cans. The total was lower than we often collect because a crew of prison inmates had picked up the road early in September. The State gave us a head start, and we were able to get it very clean!

PenderWatch volunteers were out in full force Saturday, February 3, in spite of the cold weather. We picked up 37 bags of trash and one bag of aluminum along Highway 17. We had 11 volunteers donating 25 hours in order to keep Hampstead clean and beautiful. Many thanks to **John and Mary Olesiewicz, Johanna Timberlake, Phyllis Powder, Clem and Marjorie Bribitzer, Betty Wolak Howard Sterne, Jim and Marilyn Fisher and Elsa O'Connor**.

Occasionally we pick up unusual items. Why we almost always find gloves is inexplicable. One volunteer got lucky on the last pick up and found a crisp \$10 bill. While we will not guarantee that this will always happen, join us and try your luck.

Please call Elsa O'Connor to volunteer for the next pick up which is Tuesday April 17, 2001.

We make many calls to recruit volunteers for the Adopt-A-Highway program. Often the response is one of sympathy but that physical limitations preclude helping. You can still help the program by making calls. We could use a volunteer to recruit volunteers. Any volunteers? Please call Elsa (270-4946) if you could assist us.

It is not too early to mark your calendars for Beach Sweep, September 15, 2001. We will organize a small flotilla and travel to Lea and Hutaff Island(s) to clean up the beach. We especially need volunteers who have boats. Call Elsa to volunteer.

From the Editors Desk

Clem Bribitzer



A new year. New board members. The same commitment – to protect the environment and our quality of life.

Congratulations to the new Board members, who are introduced in this newsletter! Congratulations to new officers Burt Millette, President, Al Amatruda, 1st Vice President, Clem Bribitzer, 2nd Vice President, Charles Askey, Secretary, and Marion Kurdyla, Treasurer.

In the last year, PW&C has been growing and increasing our influence. One encouraging development is that PW&C is strengthening its relations with other environmental groups. An article contributed by the North Carolina Coastal Federation will be a regular feature in the newsletter.

The annual meeting was well attended. Andy Woods gave an inspiring presentation that was covered by three local newspapers. Andy is now Education Director with Audubon North Carolina, the local arm of the National Audubon Society. He described the Society's plans for protecting wildlife on Lea and Hutaff Islands giving us graphic illustrations of the natural beauty and ecological importance of our own closest barrier islands. Members who would like to support Audubon North Carolina's "Friends of the Coastal Islands Sanctuary" program can send a check made out to "Audubon North Carolina" to National Audubon Society, 3806B Park Avenue, Wilmington, NC 28403. Audubon North Carolina will apply the funds specifically to their activities at Lea and Hutaff islands if you make that designation on your check or accompanying note. Membership categories begin at \$25. Larger amounts are welcome.

PW&C is working with the Audubon Society to arrange an educational trip to Lea Island sometime this spring. This could be fun and interesting. We will send out more information as we make firm plans.

To change the subject drastically, as I emptied a plastic bottle of olive oil today, I was reminded that we need guidance as to what can be recycled. The County went to the trouble of seeking a vendor for slick paper, but the arrangement fell through. We should encourage seeking another vendor. It is not clear which plastics are actually recycled and which are eventually trashed. The citizens of Pender county need to know what can or cannot be brought to the disposal facilities for recycling! The County Commissioners promised a new brochure on the subject. Where is it?

Beach Plan Already Exists: Now Let's Carry It Out

Executive Director

Todd Miller

NC Coastal Federation

Tucked away in this year's budget passed by the NC General Assembly is an unfunded mandate for the Department of Environment and Natural Resources to prepare a plan by May 1, 2001 to determine how to fund beach restoration projects in North Carolina.

Pressure to get the State more vested in these projects is coming from oceanfront towns and counties from the Outer Banks to Ocean Isle. Local governments are worried that along more than 160 miles of beach, the ocean may soon undermine homes, rental properties, hotels and condos, as well as the streets, highways and other utilities that service these seaside resorts. Mounting damages include eroding property values, incomes from rental properties, and the tourism economy.

North Carolina knew decades ago that this "day of reckoning" for oceanfront properties was on the way. That's why it adopted formal regulatory policies for how best to respond to continuing and predictable shoreline migration. Land use planning, construction setbacks, building relocation, subdivision rules, management of vegetation, and pumping sand on beaches are preferred responses to erosion – so assert these state policies.

Based upon these regulatory principles, projects designed to respond to erosion should avoid losses to natural heritage and not adversely affect the productivity of our coastal and ocean waters. The public trust right of the public to use the ocean beaches, including traditional recreational uses such as walking, swimming, surf-fishing and commercial fishing, are to be preserved.

It's predictable that oceanfront communities are lobbying for help in paying to put more sand on their beaches. For awhile such projects can reduce property losses and they hold out some hope for maintaining the "status quo" or even allowing more intense oceanfront development. But sea level is now rising at a projected rate of 1.7 feet per century, hurricanes and northeasters are predicted to occur more frequently and at greater intensity, and there are chronic shortages of economical sources of sand along significant portions of our coast. All this means that the ongoing costs of drawing a line in the sand and attempting to hold the beaches where they are today will escalate until it is not technologically or economically feasible to do so.

The State should base its new beach restoration strategy on its existing oceanfront policies that require a multi-faceted response to beach migration. In communities where beach renourishment is under consideration, it should only be carried out if the following tests can be met:

- There must be acceptable and adequate sources of sand available;
- The project must be properly planned, timed and executed;
- Adequate habitat and water quality monitoring must occur to evaluate effects on fisheries and water quality;
- Project planners must be completely forthcoming about the long-term costs of renourishment;
- The project must provide adequate public parking;
- The project must include an "exit strategy" to deal with beachfront property when renourishment is no longer feasible due to insufficient funds, sand supplies, and/or future storm activity; and,
- The project must be financed so that it places the burden on the people that benefit from renourishment.

Environmental Corner

Howard Sterne

A week or so ago when I sat down to write this article on cleaning up petroleum-polluted soils, I knew of no local examples. Then the *Wilmington Morning Star*, on January 31, 2001, published a report headlined, "Polluted soil plagues Pender pipeline." If you read the article, you will note that the contamination is difficult to trace because our high water table tends to move it around.



My report uses as sources two articles from Environmental Science and Technology. These are, "The Complicated Challenge of MTBE Cleanups," and "Will Ethanol-Blended Gasoline Affect Groundwater Quality?"

MTBE (methyl *tert*-butyl ether) was initially added to gasoline to increase octane ratings following the U. S. ban on alkyl lead additives in 1979. MTBE's potential for groundwater and surface water contamination was not a significant consideration when the decision was made. It is now known that the chemical is a very mobile and persistent contaminant in aqueous systems because of its high solubility and low biodegradation rates. The pungent turpentine-like odor and taste limit acceptable

levels in drinking water to 5-40 p.p.b. There is, however, significant debate regarding what level is safe.

The movement of MTBE through the ground is very dependent on soil types, soil layering, movement of groundwater, and pumping rates of water wells in an area. In fact, investigators found that when wells stopped pumping, the plume of contamination could change direction. This material can move very quickly; some has been measured moving at 26-43 feet/day. Thus it is important to stop any gasoline leaks quickly and monitor them at various levels and directions from the original site. Seven states have implemented policies to phase out MTBE, and three states are limiting the concentration in gasoline. The federal government is also proposing a reduction or ban through the Toxic Substance Control Act.

The use of ethanol (ethyl alcohol) as a fuel source is often advocated because, as it is obtained from grain, it is a renewable fuel. It is highly biodegradable under both aerobic and anaerobic conditions, and likely will essentially disappear under natural conditions. There is a \$0.54/gallon federal excise tax exemption to promote the sale of ethanol, and it is becoming more widely used in concentrations up to 10%.

So we think we have solved the problem? Hold on! There are two issues of great concern. Ethanol in water can create a co-solvent effect, and its biodegradation can deplete the groundwater of nutrients. Both processes can result in increased concentrations of hydrophobic compounds (water haters) such as benzene, increasing the distances these substances could travel from a spill site.

So we are left with a great many underground tanks that either are leaking or have leaked in the past, and that pose a threat to the environment and to our health.

At the beginning of this article, I mentioned contaminated soil in Southwestern Pender County. At the recent County Commissioners' meeting, we heard of waste spillover at the Hampstead and other trash disposal sites. Finally, today, February 3, 2001, while filling my gas tank at the Scotchman at the corner of Rte. 17 and Country Club Drive, I noticed that they are drilling a monitoring well on site. This was ordered by the State Department of Energy and Natural Resources to monitor groundwater because of leaking tanks on the site a few years ago.

We have to be vigilant! Let's keep our eyes open and make sure we report and stay on top of any spills, odors, or other potential groundwater contamination indicators. If we in PenderWatch can help, let us know!

Welcome New Board Members

PenderWatch is very happy to announce the election of six new members to the Board. With their varied backgrounds and fresh talent, 2001 should be a great year! Our new members are:

John Bonitz - John is a native North Carolinian whose career in theatre-related fields has included acting, directing, designing, and eventually becoming a film talent agent. John and his wife Suzanne now live in Hampstead where he lists his hobbies as gardening and traveling.

Jim Fisher - Jim is a Licensed Professional Engineer in North Carolina as well as Vermont and his former home, New York. After working for Honeywell, Inc., he joined a small consulting engineering firm in Albany where he rose to become President of the partnership.

Ken Just - Ken is originally from St. Louis but has lived in a number of places in the U. S. and around the world. He is a retired salesman who moved to the Wilmington area in 1993. He is interested in helping PW&C maintain the quality of life that brought him and his wife Mary Ann to Hampstead in 1994.

Marion Kurdyla - Marion is a New Jersey native who retired here with husband Rich in 1995. She lists her accomplishments as raising her family and reaching the post of Administrative Assistant to the Director of the Summit Free Public Library.

Bob Muller - Bob and his wife Joanne moved to Hampstead from Raleigh in 1990. His career with IBM began in upstate New York and brought him to North Carolina by way of Fujisawa, Japan. Among his professional activities, he has conducted management workshops for North Carolina State.

Jim Timberlake - Jim chose teaching as a profession after spending three years as a stationary engineer. While pursuing his career on Long Island, he did volunteer work for The Nature Conservancy in New York maintaining trails and protecting piping plover nesting sites. He and his wife Johanna moved to Hampstead in 1990.



Dave Richie introduces new Board members (from left to right) Jim Timberlake, Ken Just, Marion Kurdyla and Jim Fisher

PenderWatch Attends Fisheries Workshop

Jim Timberlake and Dave Richie attended "A Workshop for Citizens on Fish Conservation" at the Pine Knoll Shores Aquarium on February 3. Speakers were excellent and good information was provided, including a substantial packet to take home.

The intention was to stimulate more citizen activism on behalf of ocean resources, including habitat protection for fish nurseries and spawning areas in tidal creeks and estuaries, which we have in *abundance* in Pender County.

Jim Timberlake will be coordinating comments on important habitat protection draft reports by the N.C. Division of Marine Resources, which are due out in the next few months. Members who have a special interest or qualifications in this area are encouraged to contact Jim. 270-3155.



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Charles Askey*, *Secretary*
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Jim Timberlake
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Bill Wolak
*Past President

POSTAL PATRON



North Carolina
Department of Administration

Michael F. Easley, Governor

Gwynn T. Swinson, Secretary

March 19, 2001

Mr. Glenn McIntosh
Dept. of the Army Corps of Engineers
Wilmington District
P.O. Box 1890
Wilmington, NC 28402-1890

Dear Mr. McIntosh:

Re: SCH File # 01-E-0000-0497; Scoping Proposal to Determine Necessary Actions Relative to Shore Protection Activities for Surf City and North Topsail Beach in Pender and Onslow Counties

The above referenced project has been reviewed through the State Clearinghouse Intergovernmental Review Process. Attached to this letter are comments made by agencies reviewing this document.

Should you have any questions, please do not hesitate to call me at (919) 807-2425.

Sincerely,

A handwritten signature in cursive script that reads "Chrys Baggett".

Ms. Chrys Baggett
Environmental Policy Act Coordinator

Attachments

cc: Region O
Region P

North Carolina
Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary



MEMORANDUM

TO: Chrys Baggett
State Clearinghouse

FROM: Melba McGee
Environmental Review Coordinator

RE: 01E-0497 Scoping Shore Protection Alternative on Topsail Beach
and Surf City, Pender and Onslow Counties

DATE: March 14, 2001

The Department of Environment and Natural Resources has reviewed the proposed information. The attached comments are for the applicant's information and consideration.

Thank you for the opportunity to review.

Attachments

RECEIVED

MAR 15 2001

N.C. STATE CLEARINGHOUSE



☒ North Carolina Wildlife Resources Commission ☒

Charles R. Fullwood, Executive Director

MEMORANDUM

TO: Melba McGee
Office of Legislative & Intergovernmental Affairs

FROM: Bennett Wynne *BW*
Habitat Conservation Program

DATE: March 13, 2001

SUBJECT: Request for scoping comments regarding resources potentially impacted by various shore protection alternatives on Topsail Island, Onslow and Pender Counties, North Carolina. Project Number: 01E-0497.

It is our understanding the Army Corps of Engineers has been directed to determine the need for shoreline protection measures on Topsail Island. Shoreline protection alternatives examined in Environmental Impact Statements would include beach nourishment, non-structural measures (relocation), and no action. We are pleased to see the inclusion of relocation among the alternatives and recommend that it be given serious consideration during preparation of the environmental documents.

State and federally listed (Threatened) sea turtles nest along the entire ocean beach of Topsail Island and the south end of the island is proposed as critical habitat for wintering piping plovers, another listed species (also Threatened). Piping plovers also nested at the south end two years ago, but this past year there was only one piping plover present on the site. The north end of the island also has some use by piping plovers, and even the North Topsail overwash (near Chadwick Bay) has had one sighting of a piping plover.

Both the north and south ends of the island get heavy use by migrating shorebirds and other waterbirds. The south end always has several pairs of nesting Wilson's plovers and American Oystercatchers (both high priority species, and oystercatchers are also State listed as Special Concern). Least terns (State listed as Special Concern) also usually try to nest there, but

Topsail Island Shore Protection

2

03/13/01

predation by house cats is high. There has been a fairly large and successful nesting colony of least terns at the North Topsail overwash in recent years. Several pairs of Wilson's plovers also nest there. The north end of the island gets less use for nesting purposes, but still generally has a couple pairs of Wilson's plovers nesting on the site, and sometimes American oystercatchers. Large numbers of waterbirds use the north end for resting and roosting.

Potential adverse impacts to fish and wildlife resources that should be thoroughly addressed in environmental documents include:

- interference with sea turtle nesting and hatching
- disturbance of colonial nesting birds
- loss of overwash fan habitat
- reduced habitat quality and quantity of sand borrow areas, particularly sand flats associated with the flood tide delta of inlets
- decimation of beach invertebrate populations and effects thereof on dependent shorebirds and fishes
- increased turbidity or other water quality decline
- filling or disturbance of wetlands during sand transport to the beaches
- cumulative impacts related to any of the above associated with this project, subsequent maintenance of this project, and other similar projects

We expect the Corps to include an April 1 to November 15 colonial nesting bird/sea turtle nesting moratorium for the beach nourishment alternative. In addition, all alternatives should take measures to avoid depletion of naturally migrating inlet and overwash habitats. Finally, due to the expanse of the project(s), potential for adverse impacts, and the need for an open exchange of concerns and ideas, we recommend that an interagency scoping meeting be held

Thank you for the opportunity to comment on the project at this early stage. If you have questions, please call me at (252) 514-4738.

Cc: Howard Hall, USFWS
Tracy Rice, USFWS
Ron Sechler, NMFS
Fritz Rohde, NCDMF
Anne Deaton, NCDMF
David Allen, NCWRC

North Carolina
Department of Environment and Natural Resources
Division of Water Resources

Michael F. Easley, Governor
William G. Ross, Jr., Secretary
John Morris, Director



March 12, 2001

MEMORANDUM

TO: Melba McGee, Environmental Coordinator
Office of Legislative and Intergovernmental Affairs

FROM: John Sutherland, Chief *J. Sutherland*
Water Projects Section

SUBJECT: Comments on Scoping Letter for Possible Shore Protection
Measures for Surf City, North Topsail Beach, and Topsail Beach,
Pender and Onslow Counties by the U.S. Corps of Engineers,
Project No. 01E-0497

The Division of Water Resources has worked closely with the Wilmington District, U.S. Army Corps of Engineers, on several shore protection studies for communities susceptible to damage from hurricanes and other major storms. We support the District's effort to determine which, if any, storm protection measures are economically and environmentally feasible in these three communities in Pender and Onslow Counties. We are also committed to providing up to 50 percent of the non-federal cost of the studies to be done, provided that North Carolina General Assembly appropriates the funding for them.

cc: John Morris

State of North Carolina
Department of Environment
and Natural Resources
Division of Environmental Health

James B. Hunt, Jr., Governor
Bill Holman, Secretary
Linda C. Sewall, Director



MEMORANDUM

TO: Melba McGee

FROM: Gina Brooks *Gina*

SUBJECT: National Environmental Policy Act, Department of the Army, Corps of Engineers

DATE: February 27, 2001

The Shellfish Sanitation and Recreational Water Quality Section would have no objection to the above mentioned project provided that the following conditions are met: 1) beach disposal occurs only between November 1st and April 30th when recreational usage is low and 2) clean sand is used and not dredged sand from closed shellfishing areas. If beach disposal was to occur at times other than stated above or if sand from a closed shellfishing area is to be used, a swimming advisory may be posted and a press release may be made. Please notify this office when such disposal occurs.

If you have any questions regarding this matter, please contact me at (252)726-6827 or you may email me at gina.brooks@ncmail.net.

SHELLFISH SANITATION SECTION, P. O. BOX 769, MOREHEAD CITY, NC 28557-0769

TELEPHONE 252-726-6827 FAX 252-726-8475

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NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

STATE NUMBER: 01-E-0000-0497 H05
DATE RECEIVED: 02/14/2001
AGENCY RESPONSE: 03/09/2001
REVIEW CLOSED: 03/14/2001

MS MELBA MCGEE
CLEARINGHOUSE COORD
DEHNR - COASTAL MGT
C/O ARCHDALE BLDG
RALEIGH NC

REVIEW DISTRIBUTION

CAPE FEAR COG
DEHNR - COASTAL MGT
DENR LEGISLATIVE AFFAIRS
DEPT OF CUL RESOURCES
EASTERN CAROLINA COUNCIL

PROJECT INFORMATION

APPLICANT: Dept. of the Army Corps of Engineers

TYPE: National Environmental Policy Act

ERD: Scoping

DESC: Proposal to Determine Necessary Actions Relative to Shore Protection Activities
for Surf City and North Topsail Beach in Pender and Onslow Counties

The attached project has been submitted to the N. C. State Clearinghouse for
intergovernmental review. Please review and submit your response by the above
indicated date. If additional review time is needed, please contact this office
at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:

- NO COMMENT
 COMMENTS ATTACHED

*Some areas of salt marsh are now
mosquito production habitat. Please
consult with Onslow Co mosquito
control 910 455-0181*

SIGNED BY:

Alvin J. Anderson

DATE:

26/02/01

North Carolina
Department of Environment and Natural Resources
Division of Coastal Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Donna D. Moffitt, Director



MEMORANDUM

TO: Melba McGee, NC Division of Policy and Development
FROM: Caroline Bellis, NC Division of Coastal Management
SUBJECT: Review of SCH#01-0497 DATE: 2/23/01

A COPY OF ALL AGENCY COMMENTS RECEIVED IS REQUESTED
 REVIEWER COMMENTS ARE ATTACHED

Review Comments:

This document is being reviewed for consistency with the NC Coastal Management Program pursuant to federal law and or NC Executive Order 15. Agency comments received by SCH are needed to develop the State's consistency position. Project Review Number (if different from above) _____
A consistency position will be developed based upon our review on or before _____.

A Consistency Determination document is, or may be required for this project pursuant to federal law and or NC Executive Order 15. Applicant should contact Caroline Bellis in Raleigh, phone (919) 733-2293, for information on proper document format and applicable state guidelines and land use plan policies.

Proposal is in draft form, a consistency response is inappropriate at this time. A Consistency Determination should be included in the final document.

A Consistency Determination Document (pursuant to federal law and/or NC Executive Order 15) is not required.

A consistency response has already been issued.

Project Number _____ Date Issued _____

Proposal involves < 20 Acres and or a structure < 60,000 Square Feet and no AECs or Land Use Plan problems.

Proposal is not in the Coastal Area and will have no significant impacts on any land or water use or natural resources of the Coastal Area.

A CAMA Permit is, or may be required for all or part of this project. Applicant should contact _____ in _____, phone # _____, for information.

A CAMA Permit has already been issued, or is currently being reviewed under separate circulation.
Permit Number _____ Date Issued _____

Other (see attached).

State of North Carolina Consistency Position:

The proposal is consistent with the NC Coastal Management Program provided that all conditions are adhered to and that all state authorization and/or permit requirements are met prior to implementation of the project.

The proposal is inconsistent with the NC Coastal Management Program.

Other (see attached).

INTERGOVERNMENTAL REVIEW – PROJECT COMMENTS

Project Number: 01E-0497 Due Date: 3/9/01

After review of this project it has been determined that the ENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

PERMITS		SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/>	Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
<input type="checkbox"/>	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit- whichever is later.	90-120 days (N/A)
<input type="checkbox"/>	Water Use Permit	Pre-application technical conference usually necessary	30 days (N/A)
<input type="checkbox"/>	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
<input type="checkbox"/>	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input type="checkbox"/>	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100, 2Q.0300, 2H.0600)	N/A	60 days
<input type="checkbox"/>	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900		
<input type="checkbox"/>	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 2D.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-733-0820.	N/A	60 days (90 days)
<input type="checkbox"/>	Complex Source Permit required under 15 A NCAC 2D.0800		
<input type="checkbox"/>	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (land Quality Sect.) At least 30 days before beginning activity. A fee of \$30 for the first acre and \$2000 for each additional acre or part must accompany the plan.		20 days (30 days)
<input type="checkbox"/>	The Sedimentation Pollution control Act of 1973 must be addressed with respect to the referenced Local Ordinance.		(30 days)
<input type="checkbox"/>	Mining Permit	On-site inspection usual. Surety bond filed with ENR. Bond amount varies with type mine and number of acres of affected land. Any are mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
<input type="checkbox"/>	North Carolina Burning permit	On-site inspection by N.C. Division Forest Resources if permit exceeds 4 days	1 day (N/A)
<input type="checkbox"/>	Special Ground Clearance Burning Permit - 22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
<input type="checkbox"/>	Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/>	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, certify construction is according to ENR approved plans. May also require permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage of the total project cost will be required upon completion.	30 days (60 days)

PERMITS		SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/>	Permit to drill exploratory oil or gas well	File surety bond of \$5,000 with ENR running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to ENR rules and regulations.	10 days N/A
<input type="checkbox"/>	Geophysical Exploration Permit	Application filed with ENR at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days N/A
<input type="checkbox"/>	State Lakes Construction Permit	Application fees based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property.	15-20 days N/A
<input checked="" type="checkbox"/>	401 Water Quality Certification	N/A	60 days (130 days)
<input type="checkbox"/>	CAMA Permit for MAJOR development	\$250.00 fee must accompany application	55 days (150 days)
<input type="checkbox"/>	CAMA Permit for MINOR development	\$50.00 fee must accompany application	22 days (25 days)
<input type="checkbox"/>	Several geodetic monuments are located in or near the project area. If any monument need to be moved or destroyed, please notify: N.C. Geodetic Survey, Box 27687 Raleigh, NC 27611		
<input type="checkbox"/>	Abandonment of any wells, if required must be in accordance with Title 15A, Subchapter 2C.0100.		
<input type="checkbox"/>	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
<input type="checkbox"/>	Compliance with 15A NCAC 2H 1000 (Coastal Stormwater Rules) is required.		45 days (N/A)
* <input type="checkbox"/>	Other comments (attach additional pages as necessary, being certain to cite comment authority)		

REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

Asheville Regional Office
59 Woodfin Place
Asheville, NC 28801
(828) 251-6208

Mooresville Regional Office
919 North Main Street
Mooresville, NC 28115
(704) 663-1699

Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, NC 28405
(910) 395-3900

Fayetteville Regional Office
225 Green Street, Suite 714
Fayetteville, NC 28301
(910) 486-1541

Raleigh Regional Office
3800 Barrett Drive, P.O. Box 27687
Raleigh, NC 27611
(919) 571-4700

Winston-Salem Regional Office
585 Woughtown Street
Winston-Salem, NC 27107
(336) 771-4600

Washington Regional Office
943 Washington Square Mall
Washington, NC 27889
(252) 946-6481



Committee on Transportation and Infrastructure

Congress of the United States

House of Representatives

Washington, DC 20515

Bud Shuster
Chairman

James L. Oberstar
Ranking Democratic Member

Jack Ebenhardt, Chief of Staff
Michael Stracka, Deputy Chief of Staff

David Heynsfeldt, Democratic Chief of Staff

COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
U.S. HOUSE OF REPRESENTATIVES
WASHINGTON, D.C.

RESOLUTION

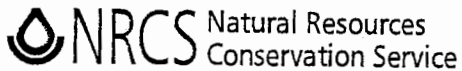
Docket 2629

North Topsail Beach, North Carolina

Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That the Secretary of the Army is requested to review the report of the Chief of Engineers on West Onslow Beach and New River Inlet, North Carolina, published as House Document 393, 102nd Congress, 2nd Session, dated September 23, 1992, and other pertinent reports, to determine whether any modifications of the recommendations contained therein are advisable at the present time in the interest of shore protection and related purposes for North Topsail Beach, North Carolina.

Adopted: April 11, 2000

ATTEST: 
BUD SHUSTER
CHAIRMAN



4405 Bland Road, Suite 205, Raleigh, NC 27609
Telephone No.: (919) 873-2134
Fax No.: (919) 873-2154

February 11, 2002

Mr. Glenn McIntosh
U. S. Army corps of Engineers
Wilmington District
P O Box 1890
Wilmington NC 28402-1890

Dear Mr. McIntosh:

Thank you for the opportunity to provide comments on Topsail Beach, Surf City, and North Topsail Beach in Pender and Onslow Counties, North Carolina.

The Natural Resources Conservation Service does not have any comments at this time.

Sincerely,

A handwritten signature in black ink that reads "Mary K. Combs".

Mary K. Combs
State Conservationist

February 14, 2001

Project Management Branch

Dear Sir or Madam:

The U.S. House of Representatives Committee on Transportation and Infrastructure has directed the Secretary of the Army to review the report of the Chief of Engineers on West Onslow Beach and New River Inlet, North Carolina, published as House Document Number 393, 102nd Congress, 2nd Session, dated September 23, 1992, to determine whether any actions are advisable at the present time in the interest of shore protection and related purposes for Surf City and North Topsail Beach, in Pender and Onslow Counties, respectively, in North Carolina. On this same beach strand, we are also reinitiating studies necessary to prepare a General Reevaluation Report (GRR) for Topsail Beach, in Pender County, North Carolina. The limits of each of these study areas are shown on the attached map.

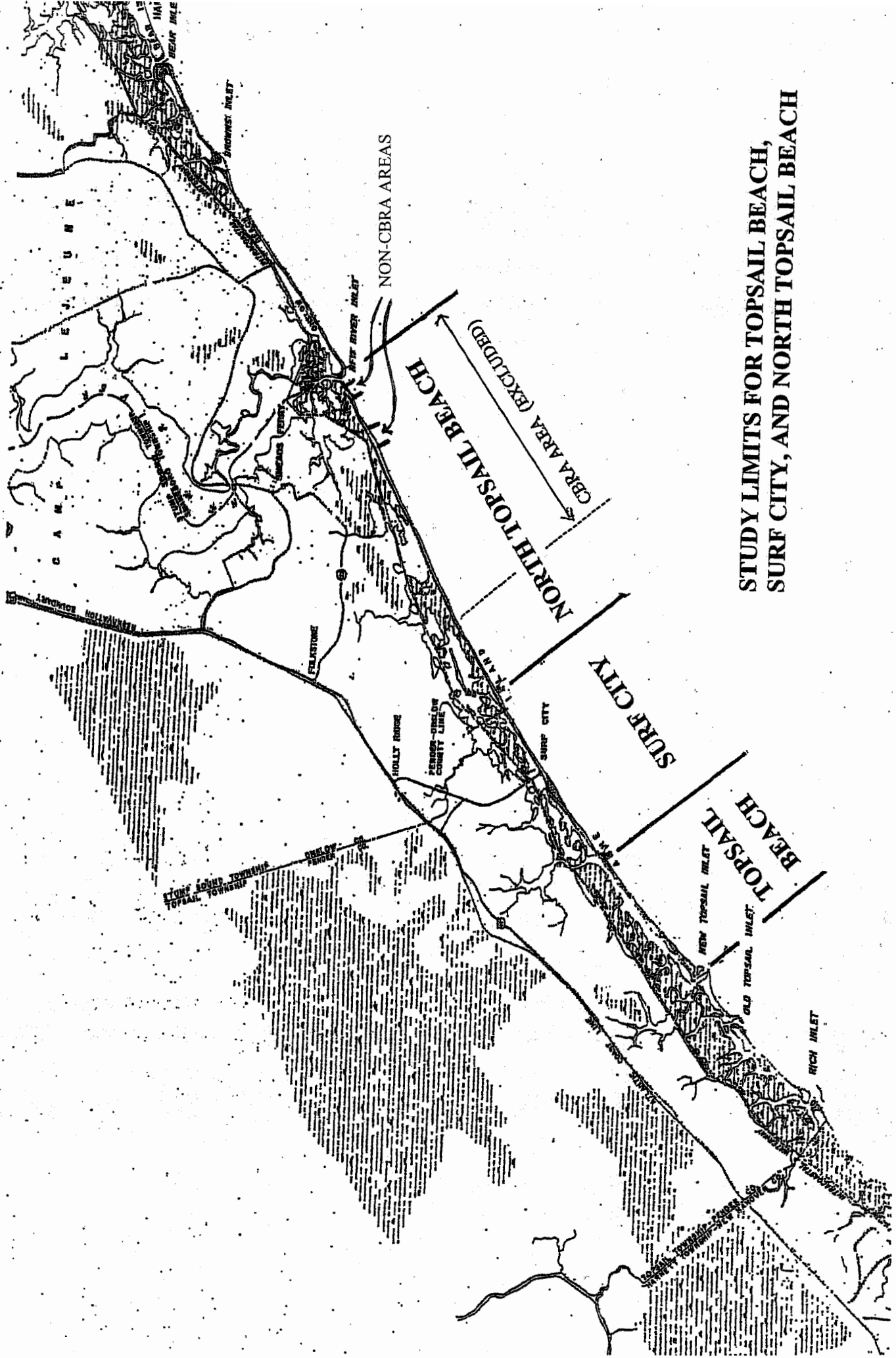
For each study area, various shore protection alternatives will be examined, including beach nourishment, non-structural measures (relocation), and No Action. Areas of North Topsail Beach that are included in the Coastal Barrier Resources Act (CBRA) will be excluded from study. We are requesting comments from agencies, interest groups, and the public to identify significant resources that may occur in these study areas or other issues of concern. Comments received as a result of this scoping letter will be used to help identify potential impacts on the environment, determine appropriate studies to be conducted, and determine the range of alternatives to be examined. These items will be addressed, as needed, in Environmental Impact Statements. No formal scoping meetings are planned; however, based on the responses received, scoping meetings may be held with specific agencies or individuals as required.

We request that you provide written comments on any of these matters within 30 days from the date of this letter. Comments should be addressed to Mr. Glenn McIntosh, U.S. Army Corps of Engineers, Wilmington District, Post Office Box 1890, Wilmington, North Carolina 28402-1890. If you have any questions, please contact Mr. McIntosh at (910) 251-4671 or e-mail address glenn.mcintosh@usace.army.mil.

Sincerely,

W. Eugene Tickner, P.E.
Deputy District Engineer
Programs and Project Management

Enclosure



**STUDY LIMITS FOR TOPSAIL BEACH,
SURF CITY, AND NORTH TOPSAIL BEACH**