



United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240
December 8, 1999



Honorable Joseph W. Westphal
Assistant Secretary of the Army (Civil Works)
Department of the Army
108 Army Pentagon
Washington, D.C. 20310-0108

Dear Dr. Westphal:

In accordance with the provisions of the Section 404(q) Memorandum of Agreement between the Department of the Interior and the Department of Army, we are requesting your review of the Mobile District decision to issue permit AL98-00541-L to Baldwin County EMC, representing Mr. Frank Hughes. This Section 10/404 permit would authorize the installation of utility conduits in the bed of Terry Cove, Baldwin County, Alabama.

The purpose of the project is to provide electrical service, water supply, and sanitary sewer service to the proposed Robinson Island development. The Mobile District issued a separate permit (AL98-00542-L) to Mr. Frank Hughes for regulated activities associated with the Robinson Island residential development on September 14, 1999. The Service objected to the issuance of the permit for the residential development based on substantial and unacceptable impacts to aquatic resources of national importance, and attempted to elevate the decision according to the Section 404(q) Memorandum of Agreement. However, the Corps rejected the Service's notice to elevate because the Service did not meet the time-lines established by the Memorandum of Agreement. The permit that is the subject of this elevation is the utility line permit for the larger Robinson Island project. The utility line permit would facilitate the development of Robinson Island, and is essential to the larger project, which could not proceed without utility service.

The Robinson Island residential development would consist of a maximum of 38 and a minimum of 29 lots, a pier for each lot, a community pier with 19 boat slips, a community swimming pool and tennis courts, bank stabilization of portions of the island, and construction of a 5-foot-wide roadway connecting the northern and southern ends of the island.

The Fish and Wildlife Service's Southeast Regional Office received a Notice of Intent to issue a permit for the proposed project on November 5, 1999. After a thorough review of the background information on the project, the Department has determined that this case warrants elevation under the MOA. Specifically, the Department of Interior has concluded that the construction of the utility lines would result in substantial and unacceptable adverse impacts on aquatic resources of national importance. Although the direct environmental impacts of the conduit may be minor and short-term, the indirect and cumulative effects resulting from this project would likely cause the

loss of a critical heron rookery, degradation of important habitat for neotropical birds, the loss of a valuable marsh area, and degradation of seagrass beds.

The Department of the Interior, acting through the Service, is vested with the authority and obligation to protect, conserve, and enhance the Nation's fish and wildlife resources. These matters fall within our jurisdiction under the Fish and Wildlife Coordination Act (48 Stat 401; 16 U.S.C. 661 *et seq.*), Section 404(m) of the Clean Water Act (62 Stat. 1155; 33 U.S.C. 1251-1376), the Fish and Wildlife Act of 1956 (70 Stat. 1119; 16 U.S.C. 742), and the Migratory Bird Treaty Act (40 Stat 755; 16 U.S.C. 703-712), as amended, to implement international treaties regarding the conservation of migratory bird populations.

Robinson Island is one of two remaining heron rookeries in coastal Alabama. Robinson Island also provides both a first and last landfall for neotropical birds as they migrate across the Gulf of Mexico. The island is one of a few undeveloped areas along the Alabama coast. This 14-acre island, located at the mouth of Perdido Bay near the Alabama-Florida State line, provides very valuable habitat functions, seemingly out of proportion to its size. It has two major wetlands areas, including an interior scrub-shrub wetland where the 7- to 9-acre rookery is centered, and a 2- to 3-acre marsh located on the northwest end of the island. The interior wetland and the upland portions of the rookery would be bisected by a roadway, which would bridge the interior wetlands. The construction of the roadway would introduce human disturbance into the rookery, with a high likelihood that such disturbance would cause the nesting birds to abandon the site. All wetlands on the site would be subject to pollution introduced by the residential development, including excess nutrients from lawn chemicals, and typical urban contaminants such as heavy metals, sediments, and petroleum products. Marsh vegetation surrounding the island would be adversely impacted by pier construction, dredging, and shoreline stabilization. Seagrass beds adjoining the island would also be lost due to disturbances associated with boat traffic, including propeller wash and maintenance dredging needed to maintain navigable water depths for the boats that provide the only access to the residents of the island.

Robinson Island is one of Alabama's last and largest remaining barrier islands containing suitable nesting and rearing habitat for colonial nesting birds. Only one other rookery exists in coastal Alabama, Cat Island near Mobile Bay. Cat Island, which formerly supported a large rookery, suffered loss of approximately 70 percent of its rookery habitat in 1998 as result of Hurricane Georges. The loss of rare rookery habitat on the Alabama coast is one of the reasons the Robinson Island rookery has expanded in size in recent years, currently supporting over one hundred nesting pairs. Herons and egrets that previously used Cat Island were forced to relocate to Robinson Island in 1999 after the damage inflicted by Hurricane Georges. The development of Robinson Island would likely destroy the largest remaining rookery in coastal Alabama, and permanently displace the birds that depend on the site, because no other suitable undeveloped sites are found in the vicinity.

Many species of neotropical migratory birds have been declining in recent years, primarily because of habitat loss. One important habitat area that is crucial to the survival of these species

is coastal forested habitat, which provides resting and foraging areas vital to birds migrating across the Gulf of Mexico. Robinson Island, Gulf State Park, and the Fort Morgan Peninsula located 30 miles to the west near Mobile Bay are some of the last remaining coastal areas in Alabama where neotropical migrants find all their requisite habitat needs. The development of Robinson Island would effectively eliminate much of the neotropical bird habitat. We consider the remaining forested habitats along the coast of Alabama to be crucial to the success of these species.

The Service is also concerned that the Robinson Island development would result in the degradation of water quality in Terry Cove, which surrounds the island. We raised concerns about water quality in our Fish and Wildlife Coordination Act reports dated May 27 and August 8, 1999. The lack of a water quality plan and a stormwater management plan for the site will likely result in decreased water quality in Terry Cove. Terry Cove supports seagrass beds, which are very valuable aquatic habitat for many species of commercial and non-commercial fish species. We believe that this important aquatic resource will be adversely impacted through the indirect and cumulative effects of the Robinson Island development. The increase in boat traffic from the island development, periodic dredging needed to maintain access to the numerous piers on the island, and non-point source runoff from the development cumulatively would threaten seagrass beds through increased water turbidity, phosphorus and nitrogen pollution, and direct loss through dredging activities.

The strong currents around Robinson Island, and the frequency of hurricanes in the area will necessitate the eventual protection of the entire shoreline of the island by riprap and bulkheads once the site has been developed. Much of the island is surrounded by a fringe of marsh, and a 2- to 3-acre marsh is found on the northern end of the island. The installation of riprap on the northern end of the island, authorized by the permit for the Robinson Island development, would exacerbate erosion on the unprotected shoreline of Robinson Island, and destroy the marsh habitat.

The Service believes that the Mobile District did not adequately consider the above indirect and cumulative impacts that would result from the installation of the utility lines in making its decision on permit AL98-00541-L, as required by the National Environmental Policy Act. The utility lines are an integral part of the project, and because the development could not proceed without utilities, all reasonable indirect and cumulative impacts that would accrue through all phases of the Robinson Island development must be considered under NEPA.

The Mobile District considered three alternatives under NEPA: a "no-build" scenario; locating the project to another site; and reducing the number of lots from the 38 lots originally proposed to 29 lots. The Service recommended a scaled-back alternative, which would allow the development of the island to proceed while protecting the heron rookery and habitat for neotropical migrants. The alternative recommended by the Service would allow 11 houses and piers to be built on the site, a level of development that the applicant has stated would constitute a viable project. The Corps did not consider this alternative, or other scaled back development plans, in their evaluation of the project.

Honorable Joseph W. Westphal

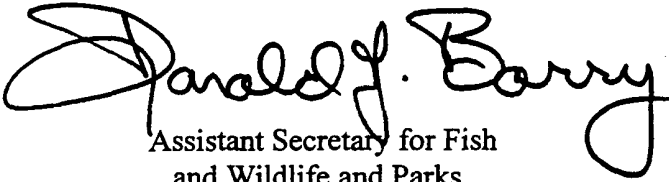
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In addition, the Mobile District did not follow the regulations found at 33 CFR 325.1(d)(2), which state that all activities which are reasonably related to the same project should be included in the same permit application. The separate permits issued by the Corps for the regulated activities associated with the residential development of the island, and the utility lines required for the same development, are clearly contrary to these regulations.

We recommend that permit AL98-00541-L issued for the Robinson Island utility line be revoked, and that any activities for the site which require a Department of the Army authorization be reviewed in accordance with NEPA and all applicable Corps regulations and policies.

We look forward to meeting with the Department of the Army to discuss the Mobile District's proposed permit decision. Enclosed is additional information addressing these and other issues relative to the proposed action. Please do not hesitate to contact me if you have any questions.

Sincerely,


Assistant Secretary for Fish
and Wildlife and Parks

Enclosure

**EMC BALDWIN COUNTY EMC (AL98-00541-L)
ROBINSON ISLAND, ALABAMA**

Project Description

Baldwin County EMC, has applied for a Corps permit (AL9800541-L) to install four 4- to 5-inch-diameter PVC conduits in the bed of Terry Cove, Perdido Bay, Baldwin County, Alabama. The purpose of the project is to provide electrical power, water supply, and sanitary sewer service to the proposed Robinson Island development (previously authorized by Corps permit number AL9800542-L). The utility service that is the subject of this permit application is vital to the residential development, which could not be built without these utility lines.

The Robinson Island residential development received a Corps permit (AL98-00542-L) on September 14, 1999, to develop 29 to 38 single family houses on Robinson Island, a 14-acre island located at the mouth of Perdido Bay, adjacent to the Gulf of Mexico, near the city of Orange Beach, Alabama. The authorized project involves the construction of 29 houses on the site initially, with the option for an additional 9 houses in 6 years. Robinson Island supports a 7- to 9-acre heron rookery, and is important as a rest-stop for neotropical migratory birds. The residential development would also include a minimum of 29 individual piers, a community pier with 19 boat slips, a swimming pool, tennis courts, and a roadway, which would connect the southern and northern ends of the island, and bisect the heron rookery in the process.

Aquatic Resources of National Importance

The proposed project would result in substantial and unacceptable impacts to Aquatic Resources of National Importance, including:

- Loss of a 7- to 9-acre rookery on Robinson Island through human disturbance and fragmentation of habitat. Only two other rookery sites are known to exist in the region, and is likely that no other suitable location for the displaced rookery is available.
- Loss of a critical stop-off for migratory birds traveling across the Gulf of Mexico between North America and South America. Coastal wetlands and barrier islands such as Robinson Island are known to provide habitat for approximately 138 species of migratory birds.
- Loss of valuable seagrass habitat used by approximately 46 species of fish and shellfish, including a number of important commercial species.

Many colonial nesting birds use Robinson Island as a rookery site because the island and the surrounding waters of Perdido Bay provide virtually ideal habitat for colonial breeding birds. The secluded nature of the island's wooded wetlands, coupled with the abundant food resources of the

intertidal zone, provide exceptional breeding habitat for the great blue heron (*Ardea herodias*), tricolor heron (*Hydranassa tricolor*), snowy egret (*Egretta thula*), green heron (*Butorides striatus*), little blue heron (*Egretta caerulea*), and great egret (*Casmerodius albus*). The dense vegetative cover, lack of predators, and lack of human disturbance of the island contributes to the success of the rookery. Abundant populations of small fish and invertebrates are found in the surrounding waters of Terry Cove, and Perdido Bay. Loss of this rookery would be incompatible with the goals of the Migratory Bird Treaty Act (MBTA).

Robinson Island is crucial to the survival of many migratory bird species, which use the island as a stop-off before and after crossing the Gulf of Mexico during migrations between North America and South America. Robinson Island, Gulf State Park, and the Fort Morgan Peninsula near Mobile (located 30 miles to the west of Robinson Island) are the last remaining coastal areas in Alabama where neotropical migrants find all their requisite habitat needs during migration. Robinson Island is located just north of the barrier beach dividing Perdido Bay from the Gulf of Mexico, and as such, is the first landfall for birds making the non-stop flight across the Gulf on the spring migration. The property is used as a refueling stop, as well a refuge from inclement weather during the migration. During the southbound migration in the fall, the island is the last landfall, and represents the last opportunity for migratory birds to feed before starting the crossing of the Gulf. The proposed development of the island would eliminate the habitat that the migratory birds rely upon, through destruction of the relatively undisturbed tree and shrub habitat, and the degradation of the wooded wetlands. The Service considers the resting and foraging habitats along the coastal areas of Alabama as crucial to the success of these species.

The proposed development of Robinson Island would result in adverse impacts to the valuable seagrass beds that surround the island. Seagrass beds are a Category 1 resource of the Service, and any adverse impacts to such habitat is viewed as unacceptable. The previously permitted residential development would construct a minimum of 29 houses on the island, 29 individual piers, and a 19-slip community pier. The combination of heavy boat traffic, dredging needed to maintain navigable water depths, sedimentation, and water quality impairments associated with dense urban developments would seriously damage, if not destroy, the seagrass beds. The degradation or destruction of the seagrass beds would result in the loss of valuable habitat for the many species of fish that use the area.

Habitat Values of the Robinson Island and Perdido Bay

Robinson Island is surrounded by a fringe of marsh, lies in the middle of large areas of seagrass beds. Perdido Bay consists of marine and estuarine habitats that provide forage, shelter, and breeding areas for many species of birds, fish, shellfish, reptiles, and mammals (Tables 1-4). Certain areas of Perdido Bay support marshes that are dominated by black needlerush, which is a very productive habitat for fish and shellfish communities. Other areas of Perdido Bay, including Robinson Island, support extensive seagrass beds consisting of turtlegrass and shoalgrass. Perdido Bay is one of the few locations in Alabama where substantial seagrass beds are found. These habitats are one of Alabama's most biologically productive, and relatively undisturbed, aquatic ecosystems. An important function of the Bay's coastal wetlands, marshes, seagrass beds, and intertidal zones is the filtering and conversion of organic pollutants, excess nutrients, and

sediments into plant material that are used as food sources and habitat by many species. These coastal wetlands provide habitat for approximately 138 species of birds (Table 1), 46 species of fishes/shellfish (Table 2), 6 species of reptiles (Table 3), and 12 species of mammals (Table 4). The bald eagle (*Haliaeetus leucocephalus*) has also been reported within Perdido Bay. The Bay also supports large winter flocks of migratory waterfowl including greater scaup (*Aythya marila*), lesser scaup (*A. affinis*), and American coot (*Fulica americana*), in addition to resident terns, gulls, and wading birds, shorebirds and songbirds. The eastern brown pelican, which is listed as a federally endangered species in parts of its range also utilize the bay as a feeding area. The preservation of protected feeding areas with plentiful fishery resources, like Perdido Bay, are thought to be critically important to the successful recovery of the pelican throughout its range.

Numerous bird species utilize the abundant food sources, resting areas, and refugia within Perdido Bay, including the Robinson Island. In addition to the resident and wintering birds using the bay, seasonal influxes of migratory birds passing down the Mississippi Flyway stop at the site. Many neotropical migrating birds use Robinson Island as a staging area, either as first landfall on the northern migration across the Gulf, or as a last stop before the southern migration. Wading birds and shorebirds feed in the marshes and intertidal zones, and on the sandy berms along the shoreline of Robinson Island.

The coastal marshes found at Perdido Bay have historically been viewed as vital primary production sites that serve as the base of detrital food webs (Odum and de la Cruz 1967, and de la Cruz, 1973). Marsh detritus produced by biological decomposition and mechanical breakdown of dead plants is reported as a rich and abundant food source for marine and estuarine organisms (de la Cruz and Gabriel 1974, de la Cruz and Poe 1975, de la Cruz 1975, and Kruczynski 1982). Much of the organic matter produced in tidal marshes is exported to adjacent estuarine systems as detritus (Odum and de la Cruz 1967). Marshes dominated by species of *Juncus*, such as those near Robinson Island, in conjunction with the adjacent estuaries and intertidal zones, provide both critical nursery and foraging habitat for many sport and commercial fish and shellfish resources, including the spotted sea trout (*Cynoscion nebulosus*), gulf menhaden (*Brevoortia patronus*), red drum (*Sciaenops ocellatus*), gulf flounder (*Paralichthys albigutta*), shrimp (*Penaeus* spp.), American oyster (*Crassostrea virginica*), and blue crab (*Callinectes sapidus*). The marshes provide valuable shelter, and are the primary production source in the aquatic food web. Nursery species and forage species consume detritus, larvae, and plankton at the base of the marsh food web, then transfer these nutrients to estuarine and nearshore food webs (Stout 1984). A demonstration of the value of these marshes illustrates the critical functions they provide. A recent study determined that 95 percent of the species comprising the commercial fishery catch, and 85 percent of the species comprising the recreational fishery catch in the Gulf of Mexico spend at least part of their life cycles in coastal marshes and estuarine habitats (Thayer and Ustach 1981 and NOAA 1997). Perdido Bay is one of the most productive aquatic areas of the Alabama coast, and is also one of the more productive areas of the Gulf of Mexico.

Specific Service Trust Resources at Project Site

Two anadromous fish species, the striped bass (*Morone saxatilis*) and the federally threatened gulf sturgeon (*Acipenser oxyrinchus desotoi*), as well as the catadromous American eel (*Anguilla*

rostrata), forage in Perdido Bay. The bay also supports other numerous commercial, sport, and forage fish species (Table 2).

Substantial and Unacceptable Impacts

The activities permitted by Corps permits AL98-00541-L and AL98-00542-L would have substantial and unacceptable adverse impacts to Aquatic Resources of National Importance. The aquatic resources of national importance cited above are dependent on a healthy ecosystem within Perdido Bay. Specifically the issuance of this permit would effectuate the demise of the rookery at Robinson Island. The State of Alabama has a short coastline (approximately 55 miles), however, it constitutes a complex ecosystem, and includes Perdido Bay, Mobile Bay, Mississippi Sound, and adjacent terrestrial habitats. Only three other areas in coastal Alabama are known to support large rookeries such as is found on Robinson Island (Dindo et al, 1987). Of these, only two have active nesting, Cat Island and Little Dauphin Island. While several barrier islands dot the Alabama coastline few have the requisite habitat requirements including elevation (trees), vegetation (scrub-shrub), and isolation (uninhabited island) necessary for successful chick brooding. The overriding requirement for successful nesting seems to be isolation from human disturbance; for example, Little Dauphin Island was first used by colonial nesters after Hurricane Frederick (1979) washed out the bridge that connected the island to the larger Dauphin island. The bridge was never rebuilt and the site was quickly utilized by colonial nesting birds. Dindo et.al., (1987) concluded that colonial birds in Alabama appear to be limited by adequate nesting habitat, and that protection of the last remaining habitats is critical to the continued existence of these species in coastal Alabama. Displaced birds currently breeding on Robinson Island would not be able to find suitable nesting sites elsewhere in Perdido Bay.

Human intrusion and disturbance may reduce fecundity of colonial nesting birds. Disturbances interfere with nesting and feeding behaviors of colonial bird species that could result in individual nest failure of the nests and/or loss of the entire colony. Research carried out by Rodgers and Smith (1995 and 1997) show that 100 meters of distance between the disturbance and the rookery should maintain the rookery's overall population viability. Even with a 100-meter offset, several individual nesters may experience nest failure and eventually abandon their nests. Human disturbance similar to this proposed project can apparently be tolerated if certain mitigating factors are applied until the colony becomes acclimated to the disturbance. According to Rodgers and Smith (1995 and 1999) disturbances like house construction and associated activities should be undertaken while the colony is inactive. In addition, a visual screen, such as a fence or a row of quick-growing trees indigenous to the area that limits a visual connection between birds in the colony and human disturbances will tend to decrease flushing distances.

Our major concern with this project and its associated secondary and cumulative impacts is the loss of the bird rookery and neotropical bird habitat. Robinson Island is one of Alabama's last remaining barrier islands containing suitable nesting and rearing habitat for colonial nesting birds, and it is also extremely valuable to neotropical migrant bird species. The rookery occupies an area of the island extending from the northern tip to the center of the island. The majority of the nesting activity is concentrated at the interior wetlands where the access road is proposed. The

development of Robinson Island as proposed would be incompatible with the sustained productivity of the rookery.

Secondary/Cumulative Impacts

The rapid pace of residential developments along the Gulf coast have resulted in the degradation of water quality, the destruction of coastal wetlands, and the decline or loss of seagrass beds within Perdido Bay. We are concerned that the residential development and the associated utility installation would result in the degradation of water quality in the bay, specifically in Terry Cove, on the north side of the island. The residential development does not include a water quality management plan, and is seen as a threat to the seagrass beds surrounding the site. Declining water quality and increased boat traffic would threaten the seagrass beds through increased turbidity, destruction from propeller wash, dredging needed to maintain water depths near the piers, and elevated phosphorus and nitrogen levels. Seagrass beds are recognized as essential fish habitat by the National Marine Fisheries Service (NMFS), and are also considered Category 1 resources by the Service. Service policy states that Category 1 habitats should be preserved to the greatest extent possible, and that any losses are seen as unacceptable.

Much of the island is surrounded by a fringe of marsh vegetation. Given Robinson Island's somewhat ephemeral nature, the strong currents of Perdido Pass, and the frequency of hurricanes, we feel quite certain that the entire island would have to be stabilized by riprap and bulkheads to protect the houses that would be built on the property. It is important to note that large portions of Robinson Island were inundated by the relatively modest storm surge of Hurricane Georges in the summer of 1999. Our experience with similar projects undertaken in recent years indicates that the placement of riprap around the perimeter of the island will result in increased beach erosion downdrift from the riprapped area, and would result in the eventual destruction of all the marsh vegetation surrounding the island.

The bridging of the wooded wetlands, and stormwater discharges from the developed lots would seriously degrade the wetlands on the island, and adversely effect the rookery that is found in the wetlands. The proposed road would cut right through the center of the rookery, fragmenting this habitat. Additionally, future development plans, which call for the nine additional homes adjacent to the rookery, will further comprise the functions of the existing wetlands. Although the applicant has agreed to refrain from actually filling the wetlands, it is very likely residential development would degrade the wetlands through inputs of pesticides and nutrients.

Adequacy of Proposed Mitigation Measures

As mitigative measures to protect the rookery, the permittee would delay the construction of nine additional houses on land adjacent to the rookery for a period of 6 years. The Corps has stated that this measure will allow the herons sufficient time to find a new nesting site before the existing rookery is effectively destroyed. The Service believes that the mitigation measures that have been proposed do not adequately replace the functions and habitat values of the wetlands on the site, and will contribute to the further loss of fish and wildlife resources. The proposal to set aside wetland and upland areas for a 6-year period does not reduce the impacts of the project, it

merely delays destruction of the rookery for a period of time. The displaced wildlife will have no site available to relocate, and migratory birds will have lost a stepping stone on the migration route.

Examination of Alternatives under NEPA

The Service believes that alternatives to the to the applicant's preferred alternative should be examined under the National Environmental Policy Act. We believe that these alternatives would allow the site to be developed while providing sufficient protection to the valuable resources of Robinson Island. The Corps' environmental assessment/ NEPA document for the residential development considered three alternatives to the proposal: not building the project; development at another site; and reducing the number of lots on the site from 38 to 29. Mr. Hughes, in a letter to the Corps dated May 5, 1999, stated that while 29 lots were planned for the site, it is possible that there might only be one, five or 10 houses built on the on the island. Given that Mr. Hughes believes that the project would be viable if only a small number of houses were ever built on the island, we consider this option to be an alternative that must be evaluated by the Mobile District. In addition, we feel that the Corps must also consider alternatives that do not include features of the development such as the tennis courts, the 19-slip community pier, and location and/or construction of the interior road.

Conclusions and Recommendations

We have identified a number of areas of disagreement between the Service and the Mobile District;

- The plan does not include adequate mitigation measures or other measures to avoid potential violations of the Migratory Bird Treaty Act (MBTA).
- The proposal does not consider secondary and cumulative environmental impacts stemming from the permitted action as required by the National Environmental Policy Act.
- The Mobile District did not comply with the Corps regulations at 33 CFR at 325.1 (d)(2), which states that all activities which an applicant plans to undertake at a project site be considered as part of a single and complete project.
- The Service does not believe that our concerns about the seagrass, the rookery, and marsh habitat in and around the island have been adequately addressed by the Corps.

We also believe that the Mobile District has improperly limited their scope of analysis only to the immediate area of the placement of the piers, bridging of the interior wetlands for the AL98-00542-L, and the seagrass beds that would be disturbed by the installation of the utilities. We believe that the Corps should have also considered the secondary and cumulative impacts of the project on the aquatic environment, as detailed above.

The Corps has taken a piecemeal approach to this project by considering two separate permit actions for different phases of the same project (AL98-00541-L for development of the subdivision, and AL98-00542-L for the utility lines). The Service sought to elevate the permit issued for the residential development, but failed to meet the deadline required under Clean Water Act, Section 404(q) Memorandum of Agreement between the Corps and the Service, pursuant to part IV .3(c) of the MOA. The Mobile District rejected the elevation because the Service failed to meet the timeframes.

The environmental values of Robinson Island and the substantial injury to natural resources on the island and in adjacent areas lead us to conclude that the project should be elevated under the 404(q) memorandum. We also believe that pending permit decision for the utility lines is an integral part of the residential development, and as such all cumulative effects due to both phases of the project must be considered in evaluating this elevation. However, we also believe that the substantial and unacceptable impacts of this project on Aquatic Areas of National Importance stands on its own merits.

Furthermore, we believe that alternatives exist for development of the island that would result in fewer adverse impacts to rookery and the aquatic environment;

- The roadway through the interior of the rookery should be eliminated.
- The tennis courts and the pool should be eliminated
- A smaller number of lots could be developed on Robinson Island, largely outside of the rookery boundaries. Using the development site plan as a guide, we believe that 11 lots could be built on the island, while avoiding substantial and unacceptable impacts to the the rookery.

Table 1: Avian species of Alabama coastal area that occur or are likely to occur at Perdido Bay (Robinson Island).

Species (Waterfowl)	Common Name	Species	Common Name
<i>Aix sponsa</i>	wood duck	<i>Melanitta fusca</i>	white-winged scoter
<i>Anas acuta</i>	northern pintail	<i>Melanitta nigra</i>	black scoter
<i>Anas americana</i>	American wigeon	<i>Melanitta perspicillata</i>	surf scoter
<i>Anas chlypeata</i>	northern shoveler	<i>Oxyura jamaicensis</i>	ruddy duck
<i>Anas crecca</i>	green-winged teal	<i>Podiceps auritus</i>	horned grebe
<i>Anas discors</i>	blue-winged teal	<i>Podiceps nigricollis</i>	eared grebe
<i>Anas fulvigula</i>	mottled duck	<i>Podilymbus podiceps</i>	pied-billed grebe
<i>Anas platyrhynchos</i>	mallard	(wading birds)	
<u><i>Anas rubripes</i></u>	American black duck	<i>Ajaia ajaja</i>	roseate spoonbill
<i>Anas strepera</i>	gadwall	<i>Ardea herodias</i>	great blue heron
<i>Aythya affinis</i>	lesser scaup	<i>Botaurus lentiginosus</i>	American bittern
<i>Aythya americana</i>	redhead	<i>Bubulcus ibis</i>	cattle egret
<i>Aythya collaris</i>	ring-necked duck	<i>Butorides striatus</i>	green-backed heron
<i>Aythya marila</i>	greater scaup	<i>Casmerodius albus</i>	great egret
<i>Branta canadensis</i>	Canada goose	<i>Egretta caerulea</i>	little blue heron
<i>Bucephala albeola</i>	bufflehead	<i>Egretta rufescens</i>	reddish egret
<i>Bucephala clangula</i>	common goldeneye	<i>Egretta thula</i>	snowy egret
<i>Chen caerulescens</i>	snow goose	<i>Egretta tricolor</i>	Louisiana heron
<i>Clangula hyemalis</i>	oldsquaw	<i>Exdocimus albus</i>	white ibis
<i>Fulica americana</i>	American coot	<i>Irobrychus exilis</i>	least bittern
<i>Gallinula obloropus</i>	common moorhen	<i>Nycticorax nycticorax</i>	black-crowned night heron
<i>Gavja immer</i>	common loon	<i>Nycticorax violaceus</i>	yellow-crowned night heron
<i>Lophodytes cucullatus</i>	hooded merganser	<i>Plegadis falcinellus</i>	glossy ibis
<i>Mergus merganserser</i>	common merganser	<i>Plegadis chihi</i>	white-faced ibis
<i>Mergus serrator</i>	red-breasted merganser	(shore birds) continued:	

<i>Actitis macularia</i>	spotted sandpiper	<i>Himantopus mexicanus</i>	black-necked stilt
<i>Arenaria interpres</i>	ruddy turnstone	<i>Limnodromus griseus</i>	short-billed dowitcher
<i>Bartramia longicauda</i>	upland sandpiper	<i>Limnodromus scolopaceus</i>	long-billed dowitcher
<i>Calidris alba</i>	sanderling	<i>Limosa fedoa</i>	marbled godwit
<i>Calidris alpina</i>	dunlin	<i>Limosa haemastica</i>	Hudsonian godwit
<i>Calidris bairdii</i>	Bairds' sandpiper	<i>Numenius phaeopus</i>	whimbrel
<i>Calidris canutus</i>	red knot	<i>Phalaropus lobatus</i>	red-necked phalarope
<i>Calidris fuscicollis</i>	white-rumped sandpiper	<i>Phalaropus tricolor</i>	Wilson's phalarope
<i>Calidris himantopus</i>	stilt sandpiper	<i>Pluvialis dominica</i>	lesser golden plover
<i>Calidris maritima</i>	purple sandpiper	<i>Pluvialis squatarola</i>	black-bellied plover
<i>Calidris mauri</i>	western sandpiper	<i>Recurvirostra americana</i>	American avocet
<i>Calidris melanotos</i>	pectoral sandpiper	<i>Tringa flavipes</i>	lesser yellowlegs
<i>Calidris minutilla</i>	least sandpiper	<i>Tringa solitaria</i>	solitary sandpiper
<i>Calidris pusilla</i>	semipalmated sandpiper	<i>Tringa melanolenca</i>	greater yellowlegs
<i>Catoptrophorus semipalmatus</i>	willet	<i>Tryngites subruficollis</i>	buff-breasted sandpiper
<i>Charadrius alexandrinus</i>	snowy plover	(fishing birds) <i>Ceryle alcyon</i>	belted kingfisher
<i>Charadrius melodus</i>	piping plover	<i>Chlidonias niger</i>	black tern
<i>Charadrius semipalmatus</i>	semipalmated plover	<i>Larus argentatus</i>	herring gull
<i>Charadrius vociferus</i>	killdeer	<i>Larus atricilla</i>	laughing gull
<i>Charadrius wilsonia</i>	Wilson's plover	<i>Larus delawarensis</i>	ring-billed gull
<i>Gallinago gallinago</i>	common snipe	<i>Larus fuscus</i>	lesser black-backed gull
<i>Haematopus palliatus</i>	American oystercatcher	<i>Larus hyperboreus</i>	glaucous gull
<i>Larus marinus</i>	great black-backed gull	<i>Agelaius phoeniceus</i>	red-winged blackbird

<i>Larus philadelphia</i>	Bonaparte's gull	<i>Ammodramus caudacutus</i>	sharp-tailed sparrow
<i>Larus pipixcan</i>	Franklin's gull	<i>Ammodramus leconteii</i>	Le Conte's sparrow
<i>Pelicanus erythrorhynchus</i>	American white pelican	<i>Ammodramus maritimus</i>	seaside sparrow
<i>Pelicanus occidentalis</i>	brown pelican	<i>Cistothorus palustris</i>	marsh wren
<i>Phalacrocorax auritus</i>	double-crested cormorant	<i>Corvus ossifragus</i>	fish crow
<i>Rynchops niger</i>	black skimmer	<i>Coturnicops noveboracensis</i>	yellow rail
<i>Sterna antillarum</i>	least tern	<i>Geothlypis trichas</i>	common yellowthroat
<i>Sterna caspia</i>	Caspian tern	<i>Hirundo rustica</i>	barn swallow
<i>Sterna forsteri</i>	Forster's tern	<i>Laterallus jamaicensis</i>	black rail
<i>Sterna hirundo</i>	common tern	<i>Melospiza georgiana</i>	swamp sparrow
<i>Sterna maxima</i>	royal tern	<i>Porphyryula martinica</i>	purple gallinule
<i>Sterna nilotica</i>	gull-billed tern	<i>Porzana carolina</i>	sora
<i>Sterna sandvicensis</i>	Sandwich tern	<i>Protonotaria citrea</i>	prothonotary warbler
(raptors)		<i>Pyrocephalus rubinus</i>	vermillion flycatcher
<i>Circus cyaneus</i>	marsh hawk	<i>Quiscalus major</i>	boat-tailed grackle
<i>Elanoides forficatus</i>	American swallow-tailed kite	<i>Rallus elegans</i>	king rail
<i>Falco columbarius</i>	merlin	<i>Rallus limicola</i>	Virginia rail
<i>Falco peregrinus</i>	peregrine falcon	<i>Rallus longirostris</i>	clapper rail
<i>Haliaeetus leucocephalus</i>	bald eagle	<i>Scolopax minor</i>	American woodcock
<i>Ictinia mississippiensis</i>	Mississippi kite	<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow
<i>Pandion haliaetus</i>	osprey	<i>Tyrannus tyrannus</i>	eastern kingbird
(Other marsh birds)		<i>Tyrannus dominicensis</i>	gray kingbird
<i>Tyrannus forficatus</i>	scissor-tailed flycatcher	<i>Tachycineta bicolor</i>	tree swallow

Table 2: Finfish and commercial shellfish species of Alabama coastal estuaries and *Juncus romerianus* dominated brackish marshes that occur or are likely to occur at Perdido Bay (Robinson Island).

Species (finfish)	Common Name	Species	Common Name
<i>Acipenser oxyrinchus desotoi</i>	gulf sturgeon	<i>Morone saxatilis</i>	striped bass
<i>Achirus lineatuns</i>	lined sole	<i>Lepomis microlophus</i>	redeer sunfish
<i>Adinia xenica</i>	diamond killifish	<i>Lucania parva</i>	rainwater killifish
<i>Anchoa mitchilli</i>	bay anchovy	<i>Membras martinica</i>	rough silverside
<i>Anguilla rostrata</i>	American eel	<i>Menidia beryllina</i>	inland siverside
<i>Archosaurus probatocephalus</i>	sheepshead	<i>Microgobius thalassium</i>	green goby
<i>Arius felius</i>	hardhead catfish	<i>Micropogonias undulatus</i>	Atlantic croaker
<i>Brevoortia patronus</i>	gulf menhaden	<i>Micropterna salmoides</i>	largemouth bass
<i>Cynoscion arenarius</i>	sand seatrout	<i>Mugil cephalus</i>	striped mullet
<i>Cynoscion nebulosus</i>	spotted seatrout	<i>Oligoplites saurus</i>	leatherjacket
<i>Cyprinodon variegatus</i>	sheepshead minnow	<i>Paralichthys albigutta</i>	gulf flounder
<i>Eleotris pisonis</i>	spinycheek sleeper	<i>Paralichthys lethostigma</i>	southern flounder
<i>Eucinostomus sp.</i>	morjarra	<i>Poecilia latipinna</i>	sailfin molly
<i>Evorthodus lyricus</i>	lyre goby	<i>Pomatomus saltrix</i>	bluefish
<i>Fundulus confluentus</i>	marsh killifish	<i>Sciaenops ocellata</i>	red drum
<i>Fundulus grandis</i>	longnose killifish	<i>Strongylora marina</i>	Atlantic needlefish
<i>Fundulus similis</i>	gulf killifish	<i>Syngnathus louisianae</i>	chain pipefish
<i>Gambusia affinis</i>	mosquitofish	<i>Synodus foetens</i>	inshore lizardfish
<i>Gobiosoma bosci</i>	naked goby	(commercial shellfish)	
<i>Ictalurus punctatus</i>	channel catfish	<i>Callinectes sapidus</i>	blue crab
<i>Leiostomus xanthurus</i>	spot	<i>Crassostrea virginica</i>	American oyster
<i>Lepisosteus oculatus</i>	spotted gar	<i>Penaeus aztecus</i>	brown shrimp
<i>Lepomis macrochirus</i>	bluegill	<i>Penaeus setiferus</i>	white shrimp

Table 3: Reptile species of Alabama coastal areas that occur or are likely to occur at Perdido Bay.

Species	Common Name	Species	Common Name
<i>Alligator Mississippiensis</i>	American alligator	<i>Pseudemys alabamensis</i>	Alabama red-bellied turtle
<i>Malaclemys terrapin</i>	Mississippi diamondback terrapin	<i>Pseudemys floridana floridana</i>	Florida cooter
<i>Nerodia fasciata clarkii</i>	gulf salt marsh water snake	<i>Ophisaurus ventralis</i>	glass lizard

Table 4: Mammal species of Alabama coastal area that occur or are likely to occur at Perdido Bay.

Species	Common Name	Species	Common Name
<i>Didelphis virginiana</i>	opossum	<i>Oryzomys palustris</i>	rice rat
<i>Lutra canadensis</i>	river otter	<i>Procyon lotor varius</i>	raccoon
<i>Mustela frenata</i>	long-tailed weasel	<i>Sigmodon hispidus</i>	cotton rat
<i>Mustela vison mink</i>	southern mink	<i>Sylvilagus palustris</i>	marsh rabbit
<i>Myocastor coypus</i>	nutria	<i>Vulpes fulva</i>	red fox
<i>Ondatra zibethicus rivalicicus</i>	Louisiana muskrat	<i>Tursiops truncatus</i>	Atlantic bottlenose dolphin