

APPENDIX A – SUBPART 2
PERTINENT CORRESPONDENCE

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Comments from May 29, 2002 Public Forum Meeting

E-mail	May 29, 2002	David Allen (NCWRC) to Bennett Wynne (NCWRC)
E-mail	June 5, 2002	Bennett Wynn (NCWRC) to Mickey Sugg (USACE, Wilmington District)
Letter	June 17, 2002	John Dorney (North Carolina Division of Water Quality) to Cheryl Miller Coastal Planning & Engineering, Inc.)
Letter	June 24, 2002	Brian Strong (NCDENR, Division of Parks and Recreation) to Mickey Sugg (USACE, Wilmington District)
E-mail	June 27, 2002	Kathy Matthews (USEPA) to Mickey Sugg (USACE, Wilmington District) transmitting comments of Chief Ronald J. Mikulak (USEPA, Wetlands Regulatory Section) to Colonel Charles Alexander (USACE, Wilmington District)
Letter	June 28, 2002	Garland Pardue (USFWS, Raleigh Field Office) to Colonel Charles Alexander (USACE, Wilmington District)
E-Mail	July 1, 2002	Jim Stephenson (NCCF) to Mickey Sugg (USACE, Wilmington District)
Letter	July 1, 2002	Michelle Duval (Environmental Defense Fund) to Mickey Sugg (USACE, Wilmington District)

E-Mail July 9, 2002 Bennett Wynne (NCWRC) to Mickey Sugg (USACE, Wilmington District)

Comments from Notice of Intent and October 29, 2002 Public Scoping Meeting

Letter November 26, 2002 NMFS to Colonel Charles Alexander (USACE, Wilmington District)

Fax December 3, 2002 Jim Stephenson (NCCF) to Mickey Sugg (USACE, Wilmington District)

Other Correspondence

Letter April 5, 2002 Daniel Small (USACE, Wilmington District) to Frank Rush (Town Manager of Emerald Isle)

E-Mail October 22, 2002 Mickey Sugg (USACE) to Tom Jarrett (Coastal Planning & Engineering, Inc.)

Letter October 25, 2002 Clay Caroon (NCDENR, Division of Marine Fisheries) to Erin Haight (Coastal Planning & Engineering, Inc.)

Letter November 22, 2002 Garland Pardue (USFWS, Raleigh Field Office) to Colonel Charles Alexander (USACE, Wilmington District)

Letter December 3, 2002 Garland Pardue (USFWS, Raleigh Field Office) to Chief Ken Jolly (USACE, Wilmington District)

Letter January 29, 2003 Lawrence Eaton (NCDENR, Division of Water Quality) to Mickey Sugg (USACE, Wilmington District)

Letter	January 31, 2003	Garland Pardue (USFWS, Raleigh Field Office) to Chief Ken Jolly (USACE, Wilmington District)
Letter	February 7, 2003	Mickey Sugg (USACE, Wilmington District) to Frank Rush (Town Manager of Emerald Isle)
Letter	February 14, 2003	Brian Strong (NCDENR, Division of Parks and Recreation) to Mickey Sugg (USACE, Wilmington District)
Letter	March 3, 2003	Roy Crabtree (NMFS) to Chief Keith Harris (USACE, Wilmington District)
Memorandum	April 30, 2003	Ron Sechler (NMFS) to Coastal Planning & Engineering, Inc.
E-Mail	May 22, 2003	Ron Sechler (NMFS) to Erin Haight (Coastal Planning & Engineering, Inc.)
Memorandum	June 24, 2003	Todd Miller (NCCF) to Mickey Sugg (USACE, Wilmington District)
Memorandum	June 26, 2003	Tom Jarrett (Coastal Planning & Engineering, Inc.) to Mickey Sugg (USACE, Wilmington District)
Letter	July 16, 2003	Chief Kenneth Jolly (USACE, Wilmington District) to Eric Hawk (NMFS)
Letter	July 16, 2003	Chief Kenneth Jolly (USACE, Wilmington District) to Garland Pardue (USFWS, Raleigh Field Office)

Letter	July 29, 2003	Mike Marshall (NDENR, Division of Marine Fisheries) to Erin Haight (Coastal Planning & Engineering, Inc.)
Letter	August 8, 2003	Frederick Sutter III (NMFS) to Colonel Charles Alexander Jr. (USACE, Wilmington District)
E-mail	August 12, 2003	Ron Sechler (NMFS) to Erin Haight (Coastal Planning & Engineering, Inc.)
Letter	August 19, 2003	Mickey Sugg (USACE, Wilmington District) to Frank Rush (Emerald Isle, Town Manager)
Letter	September 15, 2003	James C. Gulick, Senior Deputy Attorney General & J. Allen Jernigan, Special Deputy Attorney General to Representative Jean Preston
Letter	October 15, 2003	Keith Harris (USACE, Wilmington District) to Ron Sechler (NMFS)
Letter	October 20, 2003	Mayor Frank Rush to property owners in the Town of Emerald Isle
Letter	October 27, 2003	David Brook (NCDCCR) to Samuel K. Jolly (USACE, Wilmington District)
Letter	October 30, 2003	Brian Strong (NCDENR) to Mickey Sugg (USACE, Wilmington District)
Letter	October 30, 2003	Garland Pardue (USFWS) to Colonel Charles Alexander (USACE, Wilmington District)

Letter	November 13, 2003 Miles Croom (NMFS) to Colonel Charles Alexander (USACE, Wilmington District)
Memo	December 12, 2003 Guy Pearce (NCDCM) to Melba McGee (NCDCM)
Memo	December 18, 2003 Mike Marshall (NCDMF) to Mickey Sugg (USACE Wilmington District)
Memo	December 19, 2003 Todd Miller (NCCF) to Mickey Sugg (USACE Wilmington District)
E-Mail	December 22, 2003 Mickey Sugg (USACE, Wilmington District) to Coastal Planning & Engineering, Inc.
Letter	December 23, 2003 David McHenry (NCWRC) to Melba McGee (NCDCM)
Letter	January 3, 2004 Michelle Duval (EDF) to Chrys Baggett (NCDA)
E-Mail	January 5, 2004 Frank Rush (Town of Emerald Isle) to Coastal Planning & Engineering, Inc.
E-Mail	January 5, 2004 Mickey Sugg (USACE, Wilmington District) to Coastal Planning & Engineering, Inc.
Memo	January 6, 2004 Mike Marshall (NCDCM) to Melba McGee (NCDCM) (Refer to December 18, 2003 Memo)
Memo	January 6, 2004 Mike Street (NCDMF) to Melba McGee (NCDCM)
Memo	January 8, 2004 Melba McGee (NCDCM) to Chrys Baggett (NCDA)

Memo	January 9, 2004	Brian Strong (NCDPR) to Melba McGee (NCDCM)
Letter	January 12, 2004	Chrys Baggett (NCDA) to Doug Huggett (NCDCM)
E-Mail	January 15, 2004	Mickey Sugg (USACE, Wilmington District) to Coastal Planning & Engineering, Inc. transmitting NCDCM comments
E-Mail	January 22, 2004	Mickey Sugg (USACE, Wilmington District) to Coastal Planning & Engineering, Inc. transmitting EPA comments
Letter	January 22, 2004	Heinz J. Mueller, Chief, NEPA Program Office (USEPA) to Mickey Sugg (USACE, Wilmington District)
Letter	January 30, 2004	Sidney Maddock to Mickey Sugg (USACE, Wilmington District)
Letter	January 30, 2004	John Fussell to Mickey Sugg (USACE, Wilmington District)

-----Original Message-----

From: David Allen [SMTP:allend@coastalnet.com]
Sent: Wednesday, May 29, 2002 5:48 PM
To: Bennett Wynne
Subject: Bogue Inlet

If you decide to send written comments on the Bogue Inlet project please mention our concerns about intertidal bird habitat, as well as our concern that the inlet spit and our unnamed island (I call it Bogue Inlet Shoal) is not starved of sand or caused to erode.

David H. Allen
Nongame Coastal Region Project Leader
North Carolina Wildlife Resources Commission
183 Paul Dr.
Trenton, NC 28585
Phone: (252)448-1546
Email: allend@coastalnet.com

Sugg, Mickey T SAW

From: Bennett Wynne [wynnemb@coastalnet.com]
Sent: Wednesday, June 05, 2002 11:25 AM
To: 'Sugg, Mickey'
Cc: 'McBride, Franklin T.'; 'Deaton, Shannon'; 'Allen, David'
Subject: FW: Bogue Inlet

Hey Mickey. Per the 5-29-02 "pre-scoping" Bogue Inlet Relocation meeting, iterations of WRC's oral comments follow.

- Loss of intertidal habitat, particularly on the inlet flood tide delta, must be minimized.
- At least 1 year of seasonal (quarterly) pre-treatment infaunal sampling should be performed. Post-treatment infaunal sampling should also be seasonal and last 5 years.
- We support preparation of an EIS rather than an EA. This will better address biological effects (direct & cumulative) and should save the applicant time in the long run. Nobody wants a repeat of the Masons Inlet scenario.

Please also see Dave's comments below.

Thanks,
Bennett

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David H. Allen
Nongame Coastal Region Project Leader
North Carolina Wildlife Resources Commission
183 Paul Dr.
Trenton, NC 28585
Phone: (252)448-1546
Email: allend@coastalnet.com



Michael F. Easley
Governor

William G. Ross, Jr., Secretary
Department of Environment and Natural Resources

Alan Klimek, Director
Division of Water Quality

Cheryl Miller
Coastal Planning and Engineering
2481 NW Boca Raton Blvd
Boca Raton, FL 33431

6/17/02

JUN 28 2002

4600.00

(M)

Ms. Miller:

On 29 May 2002, Coastal Planning and Engineering had a meeting with the USACOE, other state and federal agencies and concerned citizens about the feasibility of moving the main channel of Bogue Inlet further west to stop erosion in The Pointe subdivision in Emerald Isle. In addition to the comments made at the meeting, the following comments and questions were brought up by DWQ personnel.

First of all, as was discussed at the meeting, it is the opinion of the Division that a new EIS will be required for this project, because cutting a new channel is a new project rather than a continuation of an existing project (e.g. maintenance dredging of an existing channel).

The first questions involved the size of the currently maintained channel. One section of the notes said 150' wide and 8' deep, while later it was suggested it might be 500' wide. This is important because, as the COE showed in Oregon Inlet, that a channel will try to maintain a constant cross-sectional area, be it wide and shallow or narrow and deep. Any attempt to move the channel should replace the current channel with one of a similar cross-sectional area, which will probably require some effort to block the existing channel for the effort to succeed. If the current channel is 150'X8' and the COE dredges a new inlet 500'X14', then large amounts of shoaling would be expected to occur due to reduced current velocities, making the inlet unsafe for all but the smallest boats, especially if there is no effort to block the current channel. This would incur large ongoing dredging costs to try to keep the inlet safe for boats. Will the increased inlet opening allow in more storm surge that could cause erosion to the marshes and tidal flats that provide habitat to many species in the area? Will a larger inlet change the salinity regime in the inlet and the White Oak River?

The next point concerned the "historic location" of the inlet. The proposed placement of the new channel through the widest part of the ebb tide delta was justified by the inlet's location within the last 30 years which was defined as its "historic location". This is only a fraction of the lifetime of this inlet, which if its entire history were examined, would probably show even further eastward migration than currently, based upon the westward edge of the maritime forest on Bogue Banks, as well as westward migrations. If we discard the notion of an historic location, moving the proposed channel about 300'



North Carolina Division of Water Quality; Wetlands/401 Unit
1650 Mail Service Center, Raleigh, NC 27699-1650
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eastward of its currently proposed location will not only disturb less ebb tide delta, it would also straighten out the approach to the inlet. This is important because the COE rejected a similarly shaped dogleg approach to Oregon Inlet as a hazard to navigation during storms.

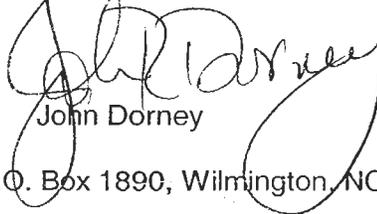
Are the homeowners whose houses are threatened by channel erosion, agreeable to this proposal? As currently envisioned, the channel in the homeowners back yard will not be filled, and the sand produced by this project will go on beaches elsewhere.

Are there any suggestions about why the inlet moved from stable to westerly migration in the 1960s to a sudden jump to the east in 1975? Finally, on the topic of channel location, is there any evidence to suggest that the newly moved channel will not merely migrate back into the old channel bed within a few years?

In the process of developing your monitoring plan for the area, you will need to collect information about previous biological studies in the area. DWQ has collected macroinvertebrates from one site, on 27 February 1996, within about a mile of the inlet. This information can be obtained from Trish MacPherson [(919) 733-6946] by asking for White Oak River station 1. I am unaware of other biological information from this inlet, so collection of baseline data of macroinvertebrates and fish before dredging starts in the area is very important. Finally, be certain to send a copy of the draft study plan to us for review before new data are collected. Otherwise the data may not be sufficient for permitting purposes.

Based on the photographs in Figure 4, Bear Island has lost at least as much land as Bogue Banks. Are there any plans to replace some of the Bear Island loss with a portion of the dredge spoil which is currently entirely earmarked to replace sand losses on Bogue Banks?

Sincerely,



John Dorney

Cc Mickey Suggs, USAED Wilmington, P.O. Box 1890, Wilmington, NC 28402-1890
Joanne Steenhuis, WiRO
Lawrence Eaton, Wetlands/401 Unit



North Carolina Department of Environment and Natural Resources
Division of Parks and Recreation

Michael F. Easley, Governor

William G. Ross, Jr., Secretary

Philip K. McKnelly, Director

June 24, 2002

Mr. Mickey Sugg
US Army Corps of Engineers
Wilmington Regulatory Field Office
Post Office Box 1890
Wilmington, North Carolina 28402-1890

JUL 01 2002

17500 00
CM, TC

Dear Mr. Sugg:

I am writing in regards to the proposed Bogue Inlet channel relocation and beach nourishment project at Emerald Isle, North Carolina. Staff with the North Carolina Division of Parks and Recreation (Division) would like to submit the following comments concerning this proposed project. The Division believes the proposed channel relocation could impact Hammocks Beach State Park through shoreline loss on the north end of Bear Island and navigational impacts within Cow Channel.

Impacts to Bear Island

Hammocks Beach State Park consists of approximately 33 acres on the mainland and Bear Island an 892 acre barrier island, and Huggins Island containing 210 acres. Bear Island is approximately three and one half miles long and less than one mile wide. Bear Island is bordered by Bogue Inlet to the northeast and Bear Inlet to the southwest. A number of rare plant and animal species are endemic to the island. Rare plant species known to occur in the area include: Seabeach Amaranth, Winged Seedbox, Four-angled Flatsedge, and Moundlily Yucca. Rare animal species include: Loggerhead Turtle, Green Turtle, Wilson's Plover, Black Skimmer, Common Tern, Least Tern, Giant Swallowtail, Loammi Skipper, Eastern Painted Bunting, and Manatee. In addition, the tidal flats located around Bear Island are important feeding and roosting areas for shorebirds including the federally endangered Piping Plover.

The concentration of rare plant and animal species and the unique nature of Bear Island dictates concerted effort to protect this unique natural resource. Aerial photos compiled by Coastal Science & Engineering demonstrate the highly variable nature of Bogue Inlet. The inlet has assumed a number of different configurations over the years. Recently, the stable location of the inlet adjacent to Emerald Isle appears to be due to the dredging by the Corp at its current location. The Division is concerned that moving the inlet may lead to an increased movement of the inlet with the possibility for shoreline loss on the eastern end of Bear Island. Loss of this habitat would significantly impact the habitat of colonial nesting birds and turtles who traditionally utilize these areas.

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Impacts within Cow Channel

Access to Bear Island is maintained through a ferry system from the mainland through Cow Channel and then to Bear Island. Over the past several years, Cow Channel has seen a significant increase in sand deposition. This has required a more frequent dredging regiment for the channel (annual versus every 5 years). Although there are several possible explanation for the increased sand deposition, the number and extent of hurricanes in the past several years may have lead to an exacerbation of the problem. The Division is concerned that dredging of a new channel at Bogue Inlet may introduce more sand into the system (similar to the hurricanes) increasing the amount of dredging necessary to maintain Cow Channel.

Contingency Plan

One of the biggest hurdles facing this project is the uncertainty associated with channel and shoreline modification. Although predications can be made based on past history and understanding of beach dynamics, all parties involved must acknowledge that there is a significant amount of uncertainty associated with the project. Noted experts have stated there are serious concerns associated with mining sand from a tidal delta. Recent events associated with the shoaling at Mason Inlet demonstrate that modifying the natural beach dynamics can have unknown and possibly hazardous consequences. If this project is undertaken, there needs to be some type of contingency plan if impacts to Hammocks Beach State Park are realized. Options for this type of contingency may mean a fund that is designated to mitigate or remediate any negative impacts associated with the project. The Division would not be agreeable to commencement of this project without some type of contingency plan.

The Division appreciates this opportunity to comment on the proposed Bogue Inlet channel relocation and beach nourishment project. The Division requests that the US Army Corp of Engineers seriously considers these concerns in your review. If you have any further questions regarding these comments please call me at (919) 715-8711.

Sincerely,



Brian L. Strong
Resource Management Specialist

cc: Sam Bland, Hammocks Beach State Park Superintendent
William Berry, East District Superintendent
Mr. Tom Jarrett, Coastal Planning

Sugg, Mickey T SAW

From: Matthews.Kathy@epamail.epa.gov
Sent: Thursday, June 27, 2002 1:29 PM
To: Mickey.T.Sugg@saw02.usace.army.mil
Subject: comments on Bogue Inlet



BogueInlet.wpd

Sorry the comments are so late. Will go out in hard copy next week
(unless my boss changes them, which he hardly ever does).

(See attached file: BogueInlet.wpd)

See ya!
Kathy Matthews

(Wetlands Regulatory Section)
USEPA/EAB
980 College Station Road
Athens, GA 30605
Phone: (706) 355-8780
Fax: (706) 355-8726
Email: matthews.kathy@epa.gov

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4



Sam Nunn Atlanta Federal Center

61 Forsyth Street, S.W.

Atlanta, Georgia 30303 - 8960

Colonel Charles R. Alexander, Jr.
District Engineer
ATTN: Mr. Mickey Sugg
U.S. Army Corps of Engineers
P.O. Box 1890
Wilmington, North Carolina 28402-1890

SUBJ: Town of Emerald Isle: Proposed Relocation of Bogue Inlet Channel

Dear Colonel Alexander:

This is in reference to the request for comments on the proposed relocation of Bogue Inlet Channel and nourishment of 5.3 miles of beach, in the Town of Emerald Isle, Carteret County, North Carolina. The stated purpose of the project is to restore the shoreline that has been severely damaged from hurricanes and winter storms.

The U.S. Environmental Protection Agency, Region 4, Wetlands Section (EPA), has reviewed this proposal and the information prepared for the May 29, 2002 scoping meeting. We regret that we were unable to attend the scoping meeting, but would like to provide comments at this time. EPA has significant concerns about potential direct, secondary, and cumulative impacts from this project, which have not been adequately addressed. Our comments and recommendations are provided below.

1. The scoping information submitted for the May 29, 2002 meeting states that the Environmental Impact Statement (EIS) for the Bogue Banks beach nourishment project will be supplemented to discuss the proposed inlet relocation and associated beach nourishment of Reach 1. However, EPA believes that a separate EIS should be developed for this project, which is different in scope, and not a subset of the Bogue Banks project. The EIS should discuss the specific purpose and need for both the inlet relocation activity and the newly proposed beach nourishment activity. It appears from preliminary information that the relocation of the inlet is proposed mainly to provide the beach quality sand for beach nourishment, rather than to address a need to relocate the thalweg of the inlet. This issue should be clarified in the EIS, and each activity (inlet relocation and beach nourishment) should be examined independently of the other, as well as a combined project.
2. EPA recommends that the EIS examine several alternatives for a long-range solution, including but not limited to (1) no action, (2) abandonment and relocation of homes, (3) inlet relocation with no beach nourishment (4) beach nourishment with no inlet

relocation, and (5) inlet relocation and beach nourishment as one project. EPA recommends that the applicant discuss long-term solutions, which include actions other than repetitive inlet dredging and beach nourishment projects. We believe that a 50-year period may be a sensible timeframe to consider for shoreline changes and impacts to oceanfront properties. This is an appropriate planning period to use, because of the likely impacts from sea-level rise during this timeframe, and also because a long-term plan to abandon and/or relocate homes may be more acceptable when occurring over a 50-year period rather than shorter periods.

3. We suggest that a proposal for long-term measures include potential alternative mitigation for project impacts to the near-shore environment. Any measures which can lessen the impacts of increasingly pervasive shoreline development need to be examined. We note that the Town, although interested in protecting the existing houses on the Island, has made little effort to halt oceanfront development. We recommend that the County and municipalities revise land use plans and improve zoning ordinances (if it has not already been done), specifically targeting the acquisition and/or preservation of developed and undeveloped lots to prevent future development. We recognize that there are few undeveloped lots on this end of Emerald Isle, but the applicant should consider making arrangements remaining lots as undeveloped. These preserved properties could become a network of greenspace and public beach access, enhancing the Bogue Banks experience for tourists and locals alike. Further, we recommend that greater avoidance of hazard areas by development, expanded use of setbacks for structures, and an overall lower development density would significantly reduce storm damage, without necessarily significantly affecting the tax base.
4. By their very nature, the ocean inlets and coastal areas are unstable. Bogue Inlet's configuration has been highly dynamic, perhaps more dynamic than many other North Carolina inlets. It is not likely that this characteristic of the inlet will change. EPA does not believe that the proposal provides assurance that the relocated inlet will be stable enough to prevent future emergency dredging or other actions on the part of the applicant and/or Corps. Maintenance dredging of the inlet and/or future relocations represent a cumulative impact, which must be addressed in the EIS. Also, the EIS should discuss the financial mechanisms for maintenance of the area, particularly if the channel begins to migrate easterly again.
5. In the hydrodynamic model, the EIS should consider potential shoaling impacts, as well as erosive impacts.
6. We are particularly bewildered that although the channel has been migrating easterly at a rate of approximately 170 feet /year since 1975, homes were placed on the western-most portion of Emerald Isle. Certainly the developing entities should have been cognizant of the threats from the inlet, and the Ocean and Inlet Hazard Areas in general.

7. Finally, we note that there are so many beach nourishment projects planned across the North Carolina coastline, that EPA is becoming concerned about cumulative impacts from all of these projects on suitable habitat for shorebirds and fishes which depend on intertidal benthic macrofauna. To date, no studies have examined the cumulative impacts of all of these projects on the shorebirds and nearshore fish communities. We believe that it is appropriate for this EIS to discuss the potential cumulative impacts from all of the projects in Carteret and Onslow Counties to shorebirds and fish communities.

We recommend that all agency comments be addressed in the completion of an EIS for the project. Thank you for the opportunity to comment on this project. If you have any questions regarding these comments, please contact Kathy Matthews at the above address or by telephone at (706) 369-8754.

Sincerely,

Ronald J. Mikulak, Chief
Wetlands Regulatory Section

cc: USFWS, Raleigh
DCM/NC DENR, Raleigh
NMFS, Beaufort
DCM/NC DENR, Morehead City



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

June 28, 2002

Colonel Charles R. Alexander
District Engineer, Wilmington District
U.S. Army Corps of Engineers
Post Office Box 1890
Wilmington, North Carolina 28402-1890

JUL 03 2002
4500 00
em

Attn: Mickey Sugg, Regulatory Division

Dear Colonel Alexander:

The U.S. Fish and Wildlife Service (Service) recently attended the scoping meeting on May 29, 2002, for a proposed project to realign the dominant tidal and navigational channel within Bogue Inlet in Carteret and Onslow counties, North Carolina. Sediment would be mined from the inlet with the goal of redirecting erosive tidal flows away from development at The Pointe in western Emerald Isle. The dredged material would be placed along the oceanfront beaches of Emerald Isle within the project area authorized by U.S. Army Corps of Engineers (Corps) Permit No. 200000362 for beach fill projects on Bogue Banks.

These comments are submitted pursuant to, and in accordance with, provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

The fish and wildlife resources in the proposed project area are abundant and diverse. Sandy, tidal inlets in North Carolina provide valuable habitat to migratory shorebirds, colonial waterbirds, marine mammals and reptiles, anadromous fish, and estuarine and marine fisheries. The inlets also serve as a hydrologic pathway connecting marine and estuarine resources including wetlands, saltwater marsh, submerged aquatic vegetation (SAV), fish nursery areas, freshwater fishery rearing and marine fishery spawning areas. Many marine-estuarine fishery resources have pelagic early life stages that rely upon tidal currents at inlets to passively transport larvae from spawning to juvenile development areas.

Several federally-protected species are present in the Bogue Inlet area depending on the season. Federally-threatened and endangered sea turtles use the inlet as a pathway to estuarine foraging areas and nest on project area beaches. The West Indian manatee (*Trichechus manatus*), a federally-endangered species, may be present in or around the inlet from June to October, foraging in estuarine areas. The federally-threatened piping plover (*Charadrius melodus*) may be present in the proposed project area year-round for nesting, migration or overwintering.

Complete lists of federally-threatened and endangered species for Carteret and Onslow counties can be found on our website at <http://nc-es.fws.gov/es/countyfr.html>.

The project area has been designated with numerous management characterizations reflecting its high resource value. The waters to the east and west of the navigational channel have been designated as Outstanding Resource Waters (ORW) by the North Carolina Division of Water Quality (NCDWQ). The Natural Heritage Program has delineated several Significant Natural Heritage Areas within the project area, including Huggins and Dudley Islands, West End Beach on Emerald Isle, Hammocks Beach State Park to the west of the inlet, extensive areas within Bogue Inlet and Bogue Sound as bird islands, Hawkins Island to the northwest, and Jones Island and Cedar Point Marshes in the White Oak River to the north of the inlet. Tidal inlets have also been designated as Habitat Areas of Particular Concern (HAPC) for red drum (*Sciaenops ocellatus*), penaeid shrimp and the snapper-grouper complex by the South Atlantic Fishery Management Council (SAFMC). The Service has designated critical habitat for overwintering piping plovers at Bogue Inlet. The United States Congress has designated most of Bogue Inlet as Otherwise Protected Area (OPA) NC-06P under the Coastal Barrier Resources Act, coincident with the boundaries of Hammocks Beach State Park.

The White Oak River that drains into Bogue Inlet contains anadromous and catadromous fish rearing and spawning areas from north of the North Carolina Route 24 bridge to Maysville. Catadromous fish that use these areas include alewife (*Alosa pseudoharengus*), striped bass (*Morone saxatilis*), blueback herring (*Alosa aestivalis*), American shad (*Alosa sapidissima*), hickory shad (*Alosa mediocris*), Atlantic sturgeon (*Acipenser oxyrinchus*) and American eel (*Anguilla rostrata*). Designated nursery areas for fishery resources occur within the tidal influence of Bogue Inlet including Queens Creek, Parrots Swamp, and Dicks Creek to the northwest and Pettiford Creek to the northeast (all tributaries to Bogue Inlet).

Commercial fishery landings harvested from the White Oak River/Bogue Inlet area average 241,971 lbs and for an annual value of \$ 390,900. Up to 39 fishery species have been commercially harvested each year from this system. Blue crab (*Callinectes sapidus*), shrimp (*Penaeus* sp.), hard clams (*Mercenaria mercenaria*), spot (*Leiostomus xanthurus*), mullet (*Mugilidae* sp.), and southern flounder (*Paralichthys lethostigma*) are the largest annual catches by weight from the White Oak River and Bogue Inlet (NC DMF, unpublished data).

The tidal shoal system within Bogue Inlet provides spawning and rearing habitat for blue crab and red drum. Shoals that are subaerial during low tides are foraging and roosting habitat for migratory shorebirds and colonial waterbirds. Some of these shoals are supratidal even at high tide and provide additional habitat to avian species such as brown pelican (*Pelecanus occidentalis*), cormorant (*Phalacrocorax* sp.), black skimmer (*Rynchops niger*), American oystercatcher (*Haematopus palliatus*), and numerous egret, plover, gull and tern species. The North Carolina Wildlife Resources Commission (NC WRC) manages several of these supratidal shoals for their avifaunal use, most of which are owned by the state. The invertebrate communities within the sandy shoals are likely dominated by amphipods and polychaete worms.

In 1998, these shoal areas encompassed approximately 250 acres. This was the third largest intertidal shoal system in North Carolina and the largest south of Cape Lookout. Overall, Bogue Inlet provided the seventh largest inlet complex in terms of habitat available to avifauna in 1998 for North Carolina.

The inlet shorelines on both Bogue Banks and Hammocks Beach State Park have consistently supported bird nesting habitat. Black skimmers, least terns (*Sterna antillarum*), and Wilson's plovers (*Charadrius wilsonia*) are nesting on bare sandy flats adjacent to the inlet on both shoulders this year (D. Allen, pers. comm.). Historically, piping plovers, common terns (*Sterna hirundo*), willets (*Catoptrophorus semipalmatus*) and American oystercatchers also have nested in these areas. During migratory periods, Bogue Inlet hosts stopover and staging habitat for countless species of colonial waterbirds and shorebirds. Piping plover, Wilson's plover, semipalmated plover (*Charadrius semipalmatus*), red knot (*Calidris canutus*), sandwich tern (*Sterna sandvicensis*), Forster's tern (*Sterna forsteri*), Royal tern (*Sterna maxima*), least tern, gull-billed tern (*Sterna nilotica*), common tern, black tern (*Chlidonias niger*), Caspian tern (*Sterna caspia*), herons, egrets, marbled godwit (*Limosa fedoa*), laughing gull (*Larus atricilla*), and cormorant are commonly found in and around the inlet during spring and fall periods. Overwintering bird species include piping plover, brown pelican, cormorant, Forster's tern, Royal tern, dunlin (*Calidris alpina*), and various gull species (Fussell 1985).

As a result of this high abundance and diversity of fish and wildlife resources in the proposed project area, the Service has concerns that the project may adversely impact these resources. The inlet dredging should be designed to avoid the most important of these areas (e.g., the small islands managed by the NCWRC, important fishery nursery areas, Hammocks Beach State Park) and be sized at the minimum depth and width necessary to achieve the project goals in order to minimize environmental impacts. The proposed work schedule should avoid periods of high biological productivity to minimize impacts to fish and wildlife resources. Avoidance of disruption to estuarine dependent fishery resources of various life stages is essential. The high ecological value of the proposed action area and the potential ecological impacts warrant an Environmental Impact Statement (EIS) be prepared by the applicant.

The project plan should fully evaluate the indirect impacts the project may induce. One such impact is increased storm surge volumes and velocities to backbarrier and mainland areas by deepening and widening the channels within Bogue Inlet. The deeper and wider channel may also modify the salinity profile of adjacent estuaries, increasing the salinity at Dudley Island, Huggins Island, the White Oak River, Bogue Sound and the tidal marshes north of Hammocks Beach. Long-term alterations to salinity levels may also cause saltwater intrusion of the local aquifers in western Emerald Isle, Swansboro and Cape Carteret.

Another indirect impact resulting from large-scale mining of the shoals in Bogue Inlet to realign the tidal channels is the decreased stability of remaining inlet shoals and shorelines. The project aims to protect private property at The Pointe on Emerald Isle, but no fill will be placed within a mile of these properties. The new channel is likely to become a sediment sink, diverting

longshore transport of sediments that would otherwise feed the beaches of The Pointe and Hammocks Beach . As the Town of Emerald Isle's Project Manager Tom Jarrett stated during the scoping meeting, the inlet influences the oceanfront shoreline at least one mile to the east and west of the inlet. The potential to destabilize the inlet and increase erosion in this zone of influence should be carefully evaluated, with appropriate liabilities agreed to prior to permit issuance.

Finally, the direct loss of intertidal and supratidal shoal habitat should be mitigated for with mitigation ratios agreed to by the resource agencies and the Corps. Indirect losses of these habitats due to increased erosion rates resulting from the mining should also be mitigated, with appropriate ratios supported by thorough physical, hydrologic and biological monitoring of the resources at least one year prior to construction (and during all biological seasons). A management plan to enhance fishery and avifaunal use of the project area post-dredging may also be warranted depending on the scale of the final project design.

The Service can only support a project if it (1) is ecologically sound; (2) is the least environmentally damaging alternative; (3) has avoided and minimized damage or loss of fish and wildlife resources and uses; (4) has adopted, with guaranteed implementation, all important recommended conservation measures to satisfactorily compensate for unavoidable damage or loss to fish and wildlife resources; and, (5) is clearly a water dependent activity with a demonstrated public need, if there are wetland or shallow water habitats in the project area (January 23, 1981, Federal Register v. 46, n. 15, p. 7659).

We appreciate the opportunity to comment on this proposal. Please contact Tracy Rice or John Ellis of my staff at (919) 856-4520, extensions 12 and 26, respectively, if you have any questions or comments.

Sincerely,



Garland B. Pardue, Ph.D.
Ecological Services Supervisor

References

Fussell, John O., 1985. *Finding Birds in Carteret County*. 96 p.

cc: Cheryl Miller, Coastal Planning & Engineering, Inc. (Boca Raton, FL)
Tom Jarrett, Coastal Planning & Engineering, Inc. (Wilmington)
Frank Rush, Emerald Isle Town Manager (Emerald Isle)
David Allen, NC WRC (Trenton)
Dave McHenry, NC WRC (Washington)
John Dorney, NC DWQ (Raleigh)
Ted Tyndall, NC DCM (Morehead City)
Preston Pate, NC DMF (Morehead City)
Ron Sechler, NMFS (Beaufort)
Kathy Matthews, EPA (Athens, GA)

Sugg, Mickey T SAW

From: Jim Stephenson [jims@nc coast.org]
Sent: Monday, July 01, 2002 3:22 PM
To: Mickey Sugg
Subject: Bogue Inlet

Mickey,

As you requested, we are providing some preliminary comments on Emerald Isle's plans to realign the channel in Bogue Inlet and utilize some of the sand resources to renourish an undetermined section of the beach on the western end of Emerald Isle. We have two general comments and a number of specific comments.

First we would like to remind you that the Corps of Engineers has jurisdiction under the Rivers and Harbors Act to determine the location of navigational channels and to dredge channels within inlets as necessary for navigation. Under Section 10, any work to navigable waters must be recommended by the Chief of Engineers and authorized by the Secretary of War. While we appreciate the concerns within Emerald Isle that have led to consideration of a plan to realign the channel, we also recognize that the Corps has statutory authority that would be relinquished if the channel were to be moved by anyone other than the Corps.

We would also like to state that it is our understanding that the Division of Coastal Management rules prohibit erosion control projects within inlet hazard areas. Ocean Hazard categories are listed in 7H.0301 to include: beaches, frontal dunes, inlet lands, etc. Two specific AEC's within Ocean Hazard Areas include the ocean erodible area and inlet hazard area. Ocean erodible areas are mapped (7H.0304 (a)) on the "Long Term Annual Shoreline Change Rate" maps. These maps stop on the oceanfront side of the barrier islands, and do not include the inlet shorelines. The regulations group all specific use standards for erosion control activities under the headings "**Ocean Shoreline**" in 7H.0308(a). The first use standard requires that **all oceanfront erosion** response activities be consistent with the general policy statements in 7M .0200. Thus, the rules provide a clear distinction between "ocean shoreline" and "inlet hazard areas" providing a different set of rules for these two distinct areas. These distinctions are clear in the inlet hazard area rules (7H.0310). They provide specific use standards for inlet hazard areas, including the blanket prohibition on "all development in the inlet hazard area" seaward of the first line of stable vegetation. 7H.0310(c) always for a few specific exceptions from the inlet hazard area rules, including "small scale" erosion control measures that do not interfere with natural inlet movement within the estuarine portion of the inlet hazard area. This wording seems to imply that the intent of the rules is to allow for natural inlet movement and that erosion control measures (other than small scale) are clearly prohibited within the inlet hazard area. The rules also establish setbacks based upon what is required in the adjacent ocean hazard area AEC, once again clearly distinguishing the inlet hazard AEC from the ocean shoreline. It should not be assumed that just because erosion control activities are allowed within the ocean beach area, that they are permissible within inlet hazard areas as well. That same logic was followed by DCM or the CRC when it came to piers, bulkheads, etc. that are allowed within the Estuarine Shoreline AEC. To permit those specific activities, the inlet hazard area rules were amended after the Bird Island declaratory ruling. CAMA permits are issued for projects that are determined to constitute "development." Thus, any projects requiring a CAMA permit must be for "development." Therefore, the Mason Inlet "development" project was clearly inconsistent with this rule in that it involved authorizing activities seaward of the first line of stable vegetation within the inlet hazard area. In addition, mining sand from Bogue Inlet (if the mining is to remove shoals and islands

07/01/2002

that are exposed at mean low water) would also clearly run counter to this rule. There are no specific use standards to permit these types of development in the rules--and they constitute development that is seaward of the first line of stable vegetation. The proposal at Tubbs Inlet to place sand on the inlet shoreline within the inlet hazard area AEC (above mean low water) would also appear to violate the prohibition. On the other hand, channel dredging below mean low water is not within the inlet hazard area and is not impacted by these standards.

Regarding the document entitled "Description of Proposed Bogue Inlet Channel Relocation and Beach Nourishment Project, Emerald Isle, North Carolina"; we would offer the following comments.

Tidal inlets are among nature's most dynamic coastal environments, opening and closing in response to storms and, in some cases, migrating long distances along barrier shorelines. Because they serve as conduits for exchange of water, sediment and marine life, inlets are important linkages between the ocean and the sound. It is well documented that inlets have wide zones of influence, and that some of the highest ocean erosion rates in North Carolina are associated with natural processes of inlet movement.

Most inlets contain large reservoirs of sand, derived from the littoral transport system, and are therefore intimately tied to the adjacent barrier islands. These distinctive shoals of impounded sand, which occur on both the ocean side and the sound side of the inlet, are referred to, respectively, as ebb tidal deltas and flood tidal deltas. Shoals of the ebb tidal delta, which are exposed to ocean waves and strong currents, are in constant motion, exchanging and redistributing their sediments so as to impact the behavior of nearby beaches. Adjacent beaches can receive sands that are released from the ebb tidal delta, but can also lose sands that are transported offshore to the ebb tidal delta.

Many of North Carolina's 22 tidal inlets have been dredged to meet navigational needs and, most recently, to save coastal property. However, dredging can disrupt the longshore sand-sharing system by trapping sand in deep, recently dredged channels. Dredging can also change the symmetry of an inlet, influence the pattern of incoming waves, and alter the natural "breakwater effect" of the ebb tidal delta. Dredging must proceed only after careful study and with extreme caution.

Given the dynamic and variable nature of inlets, we view that it will be imperative for the U.S. Army Corps of Engineers to require an Environmental Impact Statement to fully define the project, alternatives to the preferred project, and potential impacts of all of the alternatives. In particular, we request that all cumulative impacts of inlet dredging be addressed in the EIS, including those that could affect offshore fisheries resources, onshore and offshore endangered species, and the sediment budget on adjacent islands.

We question the need and wisdom of realigning the new inlet to a depth of 14 to 18 feet below mean low water and/or a width of 600 feet. There is no justification for dredging a realigned channel to this depth and width, other than to renourish the beaches of Emerald Isle. Clearly there are offshore sand sources that are available for renourishing Emerald Isle. An EIS would need to demonstrate that offshore sand sources are not suitable for placement on Emerald Isle beaches or that accessing offshore sand sources are cost prohibitive.

Several alternatives should be studied by an EIS, including one that examines the impact of realigning the new channel to the approximate depth and width of the current channel and utilizing the dredged material to fill in the current channel. This alternative should fully examine the impact of limiting the depth and width of the new channel to the minimum necessary to allow the Corps of Engineers to maintain it. This alternative should also seek to retain as much sand as necessary in the inlet system (by filling in the current channel) in order to limit the environmental impacts on the ebb

tidal delta, the islands and marshes in the flood tidal delta and the adjacent shoreline on Bear Island. While the sand found in Bogue Inlet may be suitable for application on the beach, it is important to note that the sand already performs an important function in stabilizing the inlet as a whole.

[All of the alternatives selected for review must examine the relative environmental impacts on the ebb tidal delta, the islands and marshes in the flood tidal delta and the adjacent shoreline on Bear Island. The EIS should determine how the project will avoid environmental impacts, or if it cannot, how it will minimize environmental impacts. As a last resort, the project should indicate how it would mitigate all potential negative environmental impacts. Specifically, the EIS should examine the following:

- The impact of this project on the intertidal flats, including the impact to feeding and roosting habitats of piping plovers and colonial seabirds.
- The impact of this project on the marsh, including the potential change in tidal range in the estuary and lagoon behind Bogue Inlet.
- The impact of this project on the important habitats for crab spawning and red drum, striped mullet, spotted sea trout, southern flounder and shrimp, along with other fish species.
- All site-specific deficiencies in our understanding of the implications of inlet dredging, especially those that are related to wave refraction and "drawdown" of the ebb tidal delta.
- The impact of this project on the position, orientation, shape and area of the ebb tidal delta as the result of channel realignment.
- The impact of this project on the Dudley Island, Island #2 (NC Wildlife Resources Commission), spits, shoals, flats, marsh and other parts of the flood tidal delta. The EIS should examine the secondary impacts of changes in salinity on flora and fauna in the estuarine system influenced by Bogue Inlet.
- Seasonal pre-project monitoring data for biological resources influenced by Bogue Inlet. Independent experts in biological, physical and geological sciences should be called upon to help develop the monitoring data for all distinct ecosystems with a connection to Bogue Inlet. Monitoring data is a critical and necessary component of an EIS.
- A plan for allowing public access to the renourished beach as required by CAMA rules.
- How and when sand bags would be removed from the inlet hazard area on Emerald Isle.
- What will happen if both the current and the realigned channel close as the result of a hurricane or other storm events. Who will be responsible for the financial burden of reopening the channel?
- How Emerald Isle will restrict additional development near Bogue Inlet. Changes in inlets are often accompanied by increases or decreases in development adjacent to the inlet. Since Bogue Inlet has a well-documented history of "wagging" east and west, it is very possible that the channel will migrate back towards Emerald Isle within the not so distant future.
- The compatibility of sand sources from the inlet for placement on Emerald Isle, including the compatibility for sea turtle nesting. Also need to check for contamination of the sediment before placement on Emerald Isle.
- Meeting of North Carolina's turbidity standard of 25 NTUs.
- A reclamation plan as required by the NC Mining Act.

Thank you for the opportunity of submitting comments on the Emerald Isle's plan to realign Bogue Inlet.

Sincerely,

07/01/2002

Jim Stephenson
Policy Analyst
North Carolina Coastal Federation

Sugg, Mickey T SAW

From: Michelle Duval [mduval@environmentaldefense.org]
Sent: Monday, July 01, 2002 12:43 PM
To: mickey.t.sugg@saw02.usace.army.mil
Subject: Comments RE: Bogue Inlet Relocation



BogueInletReloc070
2.doc

Dear Mr. Sugg,

Please accept the attached letter (Word doc) as comments from Environmental Defense regarding the Bogue Inlet relocation and performance of an EIS vs. an EA. Please let me know if you have any problems opening the attachment, or if you would like me to fax you a copy -- it is not on letterhead, but my information is included on the letter. Many thanks,

Michelle Duval

(See attached file: BogueInletReloc0702.doc)

michelle duval, ph.d.
environmental defense
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919-881-2601
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mduval@environmentaldefense.org
www.environmentaldefense.org

July 1, 2002

Mr. Mickey T. Sugg
US AED, Wilmington
P.O. Box 1890
Wilmington, NC 28402-1890.

RE: Proposed Bogue Inlet Channel Relocation and Beach Nourishment Project

Dear Mr. Sugg,

Please accept these comments on behalf of Environmental Defense and our 8,000 members within North Carolina. Environmental Defense is a national, non-profit, non-governmental organization dedicated to solving environmental problems through the use of sound science, economics and policy.

It is our understanding that the town of Emerald Isle is proposing relocation and mining of the Bogue Inlet channel, and has requested that the COE Wilmington District conduct an Environmental Impact Statement (EIS). We urge the District in the strongest possible terms to conduct an EIS for this project. It is clear that an engineering endeavor of this magnitude in such a dynamic environment is highly likely to have unforeseen environmental impacts that would not be planned or mitigated for in an Environmental Assessment.

We have several specific concerns regarding this project beyond the obvious need for an EIS. First, we strongly believe that the project is being driven forward for the wrong reasons. Relocation of an inlet channel should only be considered if navigational difficulties are an issue, and this is clearly not the case at Bogue Inlet. Second, the proposed channel dimensions (300-600ft wide, 14-18ft mlw depth) are excessive even if navigational changes were necessary; these are practically the authorized dimensions of the Oregon Inlet channel. Finally, mining of the tidal delta is a risky undertaking, with unpredictable consequences; changing the shape of the tidal delta can significantly alter erosion and depositional patterns both up and downdrift of the inlet, as has been demonstrated at Folly Beach, SC.

Mr. Mickey Sugg
7/1/2002

page 2

Given the above concerns, we strongly feel that an EIS warranted. Thank you for your consideration of our comments and please don't hesitate contact me at 919-881-2601 or mduval@environmentaldefense.org.

Sincerely,

Michelle Duval, Ph.D.
Scientist
Environmental Defense, Raleigh, NC
919-881-2601
919-881-2607 (fax)

Sugg, Mickey T SAW

From: Bennett Wynne [wynnemb@coastalnet.com]
Sent: Tuesday, July 09, 2002 5:41 PM
To: 'Sugg, Mickey T SAW'
Cc: 'Allen, David'; 'Eaton, Larry'; 'McHenry, David'
Subject: RE: comments for Bogue Inlet Channel Relocation

Sorry I'm late, Mickey. Had a little hernia surgery. I'll just reiterate what I said at the meeting. More baseline data is needed for flood and ebb tide infauna (food items for birds & fish). At least 1 yr. of pre-treatment data should be collected on at least a seasonal (quarterly) frequency. Post-treatment infauna collections should last at least 3 yrs., again at seasonal frequency.

thanks,
Bennett

-----Original Message-----

From: Sugg, Mickey T SAW [SMTP:Mickey.T.Sugg@saw02.usace.army.mil]
Sent: Monday, June 03, 2002 2:34 PM
To: Bennett Wynne (E-mail); David Allen (E-mail); Dale Suiter (E-mail); David Rabon (E-mail 2); Joanne Steenhuis (E-mail); John Dorney (E-mail); John Ellis (E-mail); Kathy Matthews (E-mail); Sechler, Ron SAW; Tere Barrett (E-mail); Tracy Rice (E-mail); Rick Monaghan (E-mail); Matthew Godfrey (E-mail); Todd Miller (E-mail); Jim Stephenson (E-mail)
Cc: Frank Rush (E-mail); Greg "Rudi" Rudolph (E-mail)
Subject: comments for Bogue Inlet Channel Relocation

Just a follow-up from the May 29 meeting in Emerald Isle. As discussed, please provide your written comments to our office by July 1 (Monday), June 30 is on Sunday. You can e-mail your comments, fax, or send by mail. At this stage, it does not have to be signed letterhead.

If you have questions, call me at (910) 251-4811.

-Mickey

<< File: ATT00019.htm >>