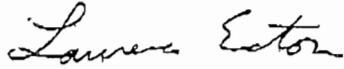


necessary. Maybe you should just select 2 or 3 of these metrics, then supplement these with some measures of functional feeding groups and or sensitivity.

Unfortunately these comments come too late for winter sampling, however maybe you can think about incorporating these into your spring and future sampling.

Please let me know if I can be of further assistance.

Sincerely,



Lawrence Eaton
DENR, Division of Water Quality
Wetlands/401 Unit
2321 Crabtree Blvd. Suite 250
Raleigh, NC 27604
(919) 733-9604



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh Field Office

Post Office Box 33726

Raleigh, North Carolina 27636-3726

January 31, 2003

Mr. Ken Jolly
Chief, Regulatory Division
Wilmington District
U.S. Army Corps of Engineers
Post Office Box 1890
Wilmington, North Carolina 28402-1890

Attention: Mr. Mickey Sugg

Dear Mr. Jolly:

The U.S. Fish and Wildlife Service (Service) has reviewed your December 4, 2002 letter and October 2002 Biological Assessment (BA) for the proposed Bogue Inlet Channel Relocation Project. The proposed activities include relocating the ebb tide channel of Bogue Inlet, between Emerald Isle and Hammocks Beach State Park (Bear Island), approximately 4,000 feet west of its current location and depositing the dredged material on approximately 4.0 miles of the beaches of Emerald Isle, in Carteret County, North Carolina. The BA was prepared to evaluate the potential effects of the proposed actions on federally-listed threatened and endangered species. Our comments are submitted pursuant to, and in accordance with, provisions of section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act).

It is our intention to provide informative and usable comments to strengthen the BA and suggestions for measures to avoid impacts, to the greatest extent possible, to federally-protected species. We hope that through this process and cooperative effort we can avoid the need for a lengthy consultation. Our comments on the October 2002 BA are listed below by section.

Section 12 Environmental Studies and Coordination – The applicant has proposed to conduct the inlet relocation and dredging activities during the off-season months to avoid disruption of nesting and migration patterns of listed species. However, this period of time is not defined. The BA should include the period of time when the project will be conducted and any efforts taken to avoid or minimize potential impacts to federally-protected species. We recommend that dredge and disposal activities be conducted between November 16 and March 31 to avoid impacts to nesting sea turtles and the piping plover and other shorebirds, the growing season of seabeach amaranth, and the period of time manatees are likely to be present on North Carolina waters. Conducting activities during this period of time does not preclude the potential for impacts to all species (e.g., migrating and wintering piping plovers may be affected), but additional measures can be implemented to further reduce the potential for adverse impacts to these species during the winter period.

Section 14 Biological Monitoring Plan – The BA indicates that biological monitoring efforts will be conducted in the Fall (November/December) and Spring (February to April) and the monitoring program will be conducted one year prior to construction, during construction, and two years after project construction. We commend the inclusion of a pre-project monitoring program; however, the BA does not sufficiently describe the biological monitoring efforts to fully evaluate whether or not the proposed monitoring schedule will produce tangible and appropriate results. We recommend that the BA completely describe the monitoring programs that will be implemented and list any and all efforts taken to avoid or minimize the potential impacts to federally-protected species. Furthermore, we recommend monitoring efforts continue for a minimum of three years post-construction to allow for the proposed actions to approach equilibrium and more accurately assess the impacts of the actions on federally-listed species. Lastly, based on the information provided, we suspect that the proposed monitoring will be conducted semi-annually, rather than bi-annually as stated in the BA. If monitoring efforts are proposed bi-annually, then additional years of data collection following construction are necessary to evaluate the impacts from the proposed project.

Section 15 Listed Species and Critical Habitat That May Be Affected – The BA indicates that awned meadowbeauty (*Rhexia aristosa*), a federal species of concern, is found within the project area. Awned meadowbeauty is typically found in shallow ponds, Carolina bays, wet pine barrens, and savannahs that experience inundation/drydown cycles. This species has not been recorded in the project area, nor is its habitat found within the project area. Therefore, it should be removed from the BA. Dune bluecurls (*Trichostema* sp. 1) and an undescribed skipper (*Atrytonopsis* sp. 1), however, are both federal species of concern that are known to occur within the project area and should be included in the BA when determining the effects of the proposed actions.

In addition to the above comments for this section, we suggest making the following corrections: (1) change the scientific name of the hawksbill turtle in Table 7 to *Eretmochelys imbricata*; (2) change the scientific name of the eastern cougar to *Puma concolor cougar*; and, (3) change the scientific name of the American alligator to *Alligator mississippiensis*.

Section 16.1.1 Status and Natural History of Species in Project Area – With regard to paragraph three of this section, updated information is available on the nesting and nearshore occurrences of the leatherback (*Dermochelys coriacea*), hawksbill (*Eretmochelys imbricata*), and Kemp's ridley (*Lepidochelys kempii*) sea turtles in North Carolina. The BA should be changed to include updated information. We recommend contacting Dr. Matthew Godfrey, Sea Turtle Coordinator for the North Carolina Wildlife Resources Commission, at 252.728.1528 for specific information on these species and their occurrences in North Carolina.

The Carolina diamondback terrapin (*Malaclemys terrapin centrata*) is a subspecies listed as a State species of special concern, and is different from the subspecies *M. t. terrapin* that is a federal species of concern. If either of these species or their habitats is present within the proposed project area, then additional relevant information should be provided on the status and natural history of these subspecies, as well as an evaluation of the potential effects of the

proposed actions.

Section 16.1.2 Effect Determination – The BA must include specific information that supports and justifies the determination of effects on federally-protected species. This section fails to describe how the proposed project “is likely to adversely affect” sea turtles. Additional information is required before we can provide a concurrence or non-concurrence response.

Section 16.2.1 Status and Natural History of Species in Project Area – Manatees have been recorded in North Carolina waters nine months of the year, but are most likely to occur from June through October (e.g., Schwartz, 1995). This section should be revised to reflect this species’ occurrence in North Carolina.

Section 16.2.2 Effect Determination – The BA must include specific information on the timing of the proposed actions and any measures to be employed to support your determination. We recommend using the guidelines (attached) to assist in avoiding and minimizing potential impacts to the manatee.

Section 16.5.2 Effect Determination – This section fails to consider the indirect effects that habitat disturbance associated with the proposed actions will have on the piping plover, including bird displacement, energy requirements/demands, and loss of foraging and roosting habitat. Additional information is required to support a “not likely to adversely affect” determination, including a thorough description of any measures proposed to reduce potential impacts.

Section 16.6.2 Effect Determination – This section provides important information supporting the determination and actions proposed to further minimize potential impacts to piping plover habitat. However, greater detail is needed in describing how the proposed project will affect the primary constituent elements of designated critical habitat and how the special management considerations will avoid, minimize, protect, and/or mitigate for the potential impacts. In addition, we recommend the proposed signage informing the public of critical habitat include information on the species and the importance of the habitat.

Section 16.8.2 Effect Determination – The BA indicates that because seabeach amaranth is “capable of producing thousands of seed during its growing season,” the proposed project is not expected to adversely impact this species. The prolificacy of seed production is not sufficient evidence to support this determination. We suggest that the BA include additional information on the timing of the proposed action, the method of sediment placement, and pre-project monitoring results of the occurrence of this species to support the current determination. If such information is not available, then the effects determination may need to be revised accordingly.

Section 17 Efforts to Eliminate Potential Impacts to Listed Species – This section of the BA is intrinsic in evaluating the effects of the proposed actions and in justifying your determination of the effects on federally-listed species. Furthermore, the efforts described in this section will be considered part of the project (i.e., expected to occur) and evaluated as such in our concurrence or non-concurrence of your determinations. Therefore, we suggest this section be moved to be concurrent with the Biological Monitoring Plan section. In addition, we suggest the

efforts described in this section be numbered and sufficiently detailed to provide our agency the greatest understanding of the measures that will be employed to avoid, minimize, and/or mitigate potential impacts to federally-protected species and/or their habitats. For example, we suggest including a detailed description of the (1) timing of the project, (2) parameters established to determine the need for tilling, (3) protocols used for monitoring and/or relocating of federally-listed species, and (4) restrictions proposed to reduce impacts to federally-listed species and their habitats during or post construction.

Section 18 Summary Effect Determination – With regard to the effect determinations, the BA should completely assess and evaluate the direct, indirect, and cumulative impacts of the proposed actions on each federally-listed species potentially impacted by the proposed actions. The Service will provide a concurrence or non-concurrence response based on the information provided and our assessment of the potential impacts. Further, the Service will determine whether or not the proposed actions will jeopardize the continued existence of federally-protected species through the formal consultation process, if necessary, which will result in a Biological Opinion.

Thank you for your cooperation with our agency in protecting federally-listed species. We look forward to cooperating with your agency in the development of this project, and suggest that we meet to discuss the comments and suggestions provided in this letter. If you have any questions or comments, please contact Mr. David Rabon of this office at (919) 856-4520 extension 16, or via email at david_rabon@fws.gov.

Sincerely,



Dr. Garland B. Pardue
Ecological Services Supervisor

Encl.

cc: NCWRC, Kinston, NC (Bennet Wynne)
NCWRC, Beaufort, NC (Matthew Godfrey)
Town of Emerald Isle, 7500 Emerald Drive, Emerald Isle, NC 28594-9320 (Frank Rush)
Coastal Planning and Engineering, 204 Dorchester Place, Wilmington, NC (Tom Jarrett)

References

Schwartz, F. J. 1995. Florida manatees, *Trichechus manatus* (Sirenia: Trichechidae), in North Carolina 1919-1994. *Brimleyana* 22:53-60.

Precautionary Guidelines for General Construction in Areas Which May Be Used by the West Indian Manatee in North Carolina

1. The applicant will inform all personnel associated with the project that manatees may be present in the project area, primarily during the months June through October, and the need to avoid any harm to these endangered mammals. The applicant will ensure that all construction personnel know the general appearance of the species and their habit of moving about completely or partially submerged in shallow water. All construction personnel will be informed that they are responsible for observing water-related activities for the presence of manatees.
2. The applicant will advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Endangered Species Act of 1973, as amended, and the Marine Mammal Protection Act of 1972, as amended.
3. If a manatee is seen within 300 ft of the active daily construction/dredging operation or vessel movement, all appropriate precautions must be implemented to ensure protection of the manatee. The precautions must include the operation of all moving equipment no closer than 50 ft of a manatee. Operation of any equipment closer than 50 ft to a manatee must necessitate immediate shutdown of the equipment. Activities will not resume until the manatee has departed the project area on its own volition. Manatees should not be herded away or harassed into leaving.
4. Any collision with and/or injury to a manatee will be reported immediately. The report must be made to the U.S. Fish and Wildlife Service and the North Carolina Wildlife Resources Commission immediately, and dredging should be postponed until cause of injury or mortality can be determined and a revised dredging and or monitoring plan is produced and approved by the Service.
5. A sign must be posted in all vessels associated with the project where it is clearly visible to the vessel operator. The sign should state:

CAUTION: The endangered manatee may occur in these waters during the warmer months, primarily from June through October. Idle speed is required if operating this vessel in shallow water during these months. All equipment must be shut down if a manatee comes within 50 ft of operating equipment. A collision with and/or injury to a manatee will be reported immediately to the U.S. Fish and Wildlife Service and the North Carolina Wildlife Resources Commission.
6. The applicant/contractor will maintain a log detailing sightings, collisions, or injuries to manatees during project construction. After construction, the applicant/contractor will prepare a report which summarizes all information on manatees during construction. This report will be submitted to the U.S. Fish and Wildlife Service and the North Carolina Wildlife Resources Commission.
7. All vessels associated with the construction project will operate at "no wake/idle" speeds at all times while in water where the draft of the vessel provides less than 4 ft clearance from the bottom. All vessels will follow routes of deep water whenever possible.
8. If siltation barriers must be placed in shallow water, these barriers will be: (a) made of material in which manatees cannot become entangled; (b) secured in a manner that they cannot break free and entangle manatees; and, (c) regularly monitored to ensure that manatees have not become entangled. Barriers will be placed in a manner to allow manatees entry to or exit from essential habitat.



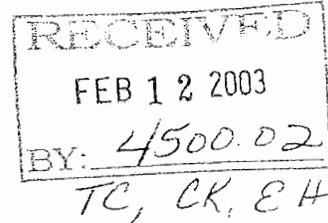
REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

February 7, 2003

Regulatory Division

Action ID. 200100632



Mr. Frank Rush, Manager
Town of Emerald Isle
7500 Emerald Isle Drive
Emerald Isle, North Carolina 28594-9320

Dear Mr. Rush:

This letter serves to provide the Town of Emerald Isle with U.S. Fish and Wildlife Service's (Service) comments on the Biological Assessment (BA) prepared by your agent, Coastal Planning & Engineering. The BA identifies the potential adverse affects on specific Threatened and Endangered species occurring within your proposal to relocate Bogue Inlet Channel and to nourish approximately 4.0 miles of Emerald Isle beach, Emerald Isle, Carteret County, North Carolina. Also, please reference our December 4, 2002 letter.

In response to our December letter to initiate consultation, the Service has provided our office with their comments in a letter dated January 31, 2003 (copies enclosed). It is strongly recommended that you incorporate these changes into the BA to ensure adequate review of the potential affects and to expedite the consultation process.

If you have questions or comments, please contact me at (910) 251-4811, Wilmington Regulatory Field Office, and I will assist you in coordinating with the Service.

Sincerely,

Mickey Sugg, Project Manager
Wilmington Regulatory Field Office

Enclosure

)
Copies Furnished (with enclosure):

Mr. Tom Jarrett
Coastal Planning & Engineering
204 Dorchester Place
Wilmington North Carolina 28412

✓ Ms. Erin Haight
Coastal Planning & Engineering
2481 N.W. Boca Raton Boulevard
Boca Raton, Florida 33431

Mr. Caroline Bellis
Division of Coastal Management
North Carolina Department of Environment
and Natural Resources
1638 Mail Service Center
Raleigh, North Carolina 27699-1638

Copies Furnished (without enclosure):

Mr. Garland Pardue
U.S. Fish and Wildlife Service
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mayor Art Schools
Town of Emerald Isle
7500 Emerald Drive
Emerald Isle, North Carolina 28594-9320

Ms. Tere Barrett
North Carolina Division
of Coastal Management
Hestron Plaza Two
151-B Highway 24
Morehead City, North Carolina 28557

Ms. Diane Long
North Carolina Department of Environment
and Natural Resources
1601 Mail Service Center
Raleigh, North Carolina 27699-1601



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

February 14, 2003

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

RECEIVED

FEB 24 2003

REGULATION
WILMINGTON FIELD OFFICE

Dear Mr. Sugg:

I am writing in regards to the proposed Bogue Inlet channel relocation and beach nourishment project at Emerald Isle, North Carolina and the proposed monitoring plans submitted for review by Coastal Planning & Engineering of North Carolina, Inc. Staff with the North Carolina Division of Parks and Recreation (Division) would like to submit the following comments concerning the proposed monitoring plans.

The Division has expressed concerns associated with this project in previous comments (see letter from Strong to Sugg June 24, 2002). Previous comments have specifically requested that Emerald Isle propose some type of contingency plan if impacts to Hammocks Beach State Park are realized. Since, no monitoring plan for Bear Island, Cow Channel, or Huggins Island were included in the monitoring plans, there appears to be no quantitative method for determining if Hammocks Beach State Park will be impacted by the proposed channel relocation. The Division is disappointed that previous concerns have gone unheeded and no specific monitoring plan was developed for Bear Island, Huggins Island, or Cow Channel.

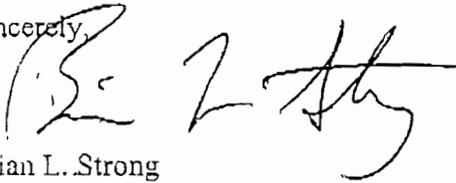
In conclusion, I would like to emphasize the uniqueness of Hammocks Beach State Park and the Divisions concerns that this project may impact this irreplaceable resource. If this project is undertaken, there needs to be some type of contingency plan if impacts to Hammocks Beach State Park are realized. 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.

1615 Mail Service Center, Raleigh, North Carolina 27699-1615

Phone: 919-733-4181 \ Fax: 919-715-3085 \ Internet: www.ncsparks.net

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Sincerely,

A handwritten signature in black ink, appearing to read "B. L. Strong". The signature is fluid and cursive, with the first name "B." and last name "Strong" clearly distinguishable.

Brian L. Strong
Resource Management Specialist

cc: Paul Donnelly, Hammocks Beach State Park Superintendent
William Berry, East District Superintendent
Mr. Tom Jarrett, Coastal Planning & Engineering of North Carolina, Inc.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
 NATIONAL MARINE FISHERIES SERVICE
 Southeast Regional Office
 9721 Executive Center Drive North
 St. Petersburg, FL 33702
 (727) 570-5312; Fax 570-5517
<http://sealdera.sero.nmfs.gov>

MAR 3 2003

F/SER3:DLK

Keith A. Harris
 Chief, Wilmington Regulatory Field Office
 Wilmington District, Corps of Engineers
 Department of the Army
 P.O. Box 1890
 Wilmington, NC 28402-1890

RECEIVED

MAR 11 2003

**REGULATORY
 WILMINGTON FIELD OFFICE**

Dear Mr. Harris:

This correspondence is in reply to the December 4, 2002, letter and accompanying information from the U.S. Army Corps of Engineers (COE), Wilmington District. The COE has requested section 7 consultation from the National Marine Fisheries Service (NOAA Fisheries), pursuant to the Endangered Species Act of 1973 (ESA). The project is the Bogue Inlet Channel Relocation Project, Emerald Isle, North Carolina. The NOAA Fisheries' consultation number for this project is I/SER/2002/01442; please refer to this number in future correspondence on this project.

The project would involve the relocation of Bogue Inlet Channel to protect residential homes and town infrastructure, and to place the dredged material on approximately 4 miles of beach for nourishment. The channel to be relocated is between Emerald Isle and Hammocks Beach State Park (Bear Island). The primary purpose of the project is to create a stable channel that will divert tidal flow away from the Pointe subdivision of Emerald Isle. Currently, severe erosion resulting from tidal movements is threatening to cause severe damage to structures, streets, and utilities in the Pointe subdivision. The design includes closure of the existing channel by constructing a sand dike across the existing channel in the vicinity of the Pointe. It is estimated that 250,000 cubic yards of material obtained from the dredging of the new channel will be used to create the dike. The remaining material will be used for nearby beach nourishment. All dredging for the project will be performed using a cutter-suction pipeline dredge. The final design details have not yet been established, and will be presented in the draft environmental impact statement (DEIS) when available.

ESA-listed species under the purview of NOAA Fisheries which potentially occur in the project area include the green (*Chelonia mydas*), loggerhead (*Caretta caretta*), Kemp's ridley (*Lepidochelys kempii*), leatherback (*Dermochelys coriacea*), and hawksbill (*Eretmochelys imbricata*) sea turtles, and the shortnose sturgeon (*Acipenser brevirostrum*). A number of endangered large whale species are known to occur along coastal North Carolina but are not expected to occur in the shallow waters in which the project would take place. No critical habitat has been designated nor proposed for listed species within the project area.

Of the sea turtle species, leatherback and hawksbill turtles are highly unlikely to occur in the nearshore areas in which the work will be performed. Additionally, the dredging of the channels will be performed using cutter-suction pipeline dredges, which have not been shown to take sea turtles, and dredging within the channel will be conducted outside of the nesting and migration periods.



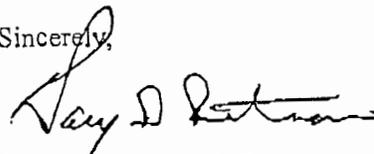
Biological observers will be on site during the dredge and fill operations to monitor for protected species. NOAA Fisheries shares joint jurisdiction over sea turtle issues with the U.S. Fish and Wildlife Service (FWS), with FWS' purview extending to sea turtles on land (nesting) and NOAA Fisheries' purview including sea turtles in the water. The COE should consult with FWS regarding any potential sea turtle nesting issues related to placement of sand or other activities on the beaches, or erosion of beaches as a result of the project. Shortnose sturgeon are known to occur in coastal North Carolina. However, they are strongly associated with larger rivers, and in North Carolina are known primarily in the Cape Fear area. Therefore, contrary to the opinion in your letter of December 10, 2002, shortnose sturgeon are not likely to occur in the project area. Based upon this review, NOAA Fisheries believes that the proposed action is not likely to adversely affect any listed species under our purview.

This letter concludes the COE's consultation responsibilities under section 7 of the ESA for the proposed actions for federally-listed species, and their critical habitat, under NOAA Fisheries' purview. Consultation should be reinitiated if there is a take, new information reveals impacts of the proposed actions that may affect listed species or their critical habitat, a new species is listed, the identified action is subsequently modified, or critical habitat is designated that may be affected by the proposed activity. Any substantive changes to the project design or methods which may potentially impact any listed species will require reinitiation of consultation when the DEIS is completed.

Pursuant to the essential fish habitat consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1855(b)(2) and 50 CFR 600.905-.930, Subpart K), the NOAA Fisheries' Habitat Conservation Division (HCD) is being copied with this letter. The HCD biologist for this region is Ron Sechler. If you have any questions about consultation regarding essential fish habitat for this project, please contact Mr. Sechler at (252) 728-5090.

If you have any questions, please contact Dennis Klemm, fishery biologist, at the number above or by e-mail at Dennis.Klemm@noaa.gov.

Sincerely,


for, Roy E. Crabtree, Ph.D.
Regional Administrator

cc: F/PR3
F/SER41- Sechler

File: 1514-22 f.1 NC
O:\section 7\informal\ Emerald Isle Bogue Inlet Channel.wpd

April 30, 2003

Memorandum For the File

Subject: Bogue Inlet Channel Relocation Project
Applicant: Town of Emerald Isle
April 25, 2003, conference call with Coastal Planning and Engineering, Inc. to discuss additional information and monitoring needed for the subject project

From: Ron Sechler, Fishery Biologist
NMFS, HCD
Beaufort, NC 28516

1. The subject conference call with the applicants consultant was originally scheduled to include both NMFS and DCM. Due to a scheduling conflict only the NMFS participated on 04/25/03. The applicant will coordinate with the DCM at a later date.
2. The objective was to inform the applicant regarding any additional site specific information needed to complete the EIS and to develop additional plans to evaluate impacts of the project.
3. The issue of the Permit Area versus Project Area was discussed. I advised that regardless of how these terms are applied by the COE and/or applicant, NOAA Fisheries would recommend documentation of the aquatic resources at risk (e.g. seagrass, shellfish beds) and an assessment of impacts to the resources by pre and post-construction monitoring (e.g. change analysis). We noted that many high quality resources are located in the Project Area as identified at the April 16th meeting.
4. NOAA Fisheries recommends using aerial photograph and GPS/GIS tools to conduct pre and post-construction monitoring of projects impacts to high quality resources. The resulting information can be used to assess changes over time in the habitats effected by the project. Any post-construction mitigative measures required would be based on the observed changes resulting from construction of the project. Habitat types to be mapped include SAV, intertidal salt marsh, unvegetated intertidal flats, shallow subtidal areas and upland areas above mean high water. The effects of natural phenomena (e.g. hurricanes) would be considered in the analysis of change in the Project Area.
5. Annual aerial photography of the Project Area should occur for a period not less than five years. The the initial pre-project photography should procured and processed using SAV habitat mapping protocols followed by two years of standard aerial photography. Site specific data using GPS should be acquired for any area where changes are occurring. Aerial photography in year 4 should also be procured and processed using SAV habitat mapping protocols. This high quality photography would allow for a quantitative analysis of changes in SAV and other high quality habitat within the project area.
6. Depending on the results of the first 4 years of monitoring (change analysis), mitigative

measures may be required to offset documented losses of high quality resources. The 5th and final year of photography would allow for an evaluation of any mitigative measures required to be implemented in the project/permit area.

7. The recommended habitat change analysis is in addition to the previously discussed monitoring efforts.

8. The recommended habitat change analysis does not include the area of Bogue Banks beach re-nourished during construction of the Bogue Inlet Channel Relocation project. Any monitoring of this beach nourishment component should be consistent with that required by the previously issued permit for beach nourishment.

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

From: Ron Sechler [mailto:ron.sechler@noaa.gov]
Sent: Thursday, May 22, 2003 10:26 AM
To: Erin Haight
Subject: Re: Bogue Inlet - SAFMC and NMFS Species

Erin,

Add the following from the list you provided to your list of species that occur in or in the vicinity of Bogue Inlet. Those species for which EFH has been designated by the SAFMC, MAFMC and NMFS (Highly Migratory Species) are identified. I'm not sure why these were not included on the list you referenced. I'm not saying that project will necessarily impact these species. But, that determination needs to be made in the EFH Assessment. However, pay close attention to Red Drum and shrimp and other (not federally managed, but many are managed by the ASMFC) estuarine dependent species because of their affinity for and movement through the inlet. Also note that State PNA and SAV are EFH and HAPC. Also tidal inlets are HAPC for Red Drum.

Black Sea Bass
Bluefish - EFH MAFMC
Cobia - EFH SAFMC
Gray Snapper EFH SAFMC
Gag Grouper
King Mackerel EFH SAFMC
Little Tunny
Penaeid shrimp EFH SAFMC (3 species)
Red Drum - EFH SAFMC
Red Grouper
Sharks - Highly Migratory Species -NMFS (**Coastal Species:** Dusky shark, Spinner shark, Tiger shark, Sand tiger shark, Atlantic sharpnose shark)
Spanish Mackerel - SAFMC
Weakfish - Managed by the Atlantic States Marine Fisheries Commission

Best Regards,

Ron Sechler
Fishery Biologist
NMFS (NOAA Fisheries)
Habitat Conservation Division
101 Pivers Island Road
Beaufort, North Carolina

252 728 5090
ron.sechler@noaa.gov

Erin Haight wrote:

Ron, Could you please review and confirm the list below of SAFMC and NMFS species listed for the Bogue Inlet area. The Bogue Banks Renourishment Project listed many of these species as not applicable (not found) to Bogue Inlet, however I would like to request your review of these species to confirm their presence or absence in the Bogue Inlet project area. Let me know if you have any questions. Thank you Erin

Almaco Jack	<i>Seriola rivoliana</i>
Atlantic Spadefish	<i>Chaetodipterus faber</i>
Banded Rudderfish	<i>Seriola zonata</i>
Bank Sea Bass	<i>Centropristis ocyurus</i>
Bigeye Tuna	<i>Thunnus obesus</i>
Black Grouper	<i>Mycteroperca bonaci</i>
Black Margate	<i>Anisotremus surinamensis</i>
Black Sea Bass	<i>Centropristis striatus</i>
Black Snapper	<i>Apsilus dentatus</i>
Blackfin Snapper	<i>Lutjanus buccanella</i>
Blue Marlin	<i>Makaira nigricans</i>
Blue Stripe Grunt	<i>Haemulon sciurus</i>
Bluefin Tuna	<i>Thunnus thynnus</i>
Bluefish	<i>Pomatomus saltatrix</i>
Blueline Tilefish	<i>Caulolatilus microps</i>
Cero	<i>Scomberomorus regalis</i>
Cobia	<i>Rachycentron canadum</i>
Coney	<i>Epinephelus fulvus</i>
Cubera Snapper	<i>Lutjanus cyanopterus</i>
Dog Snapper	<i>Lutjanus jocu</i>
Dolphin Fish	<i>Coryphaena hippurus</i>
French Grunt	<i>Haemulon flavolineatum</i>
Gag Grouper	<i>Mycteroperca microlepis</i>
Golden Crab	<i>Chaceon fenneri</i>
Golden Tilefish	<i>Lopholatilus chamaeleonticeps</i>
Goliath Grouper	<i>Epinephelus itajara</i>
Gray Snapper	<i>Lutjanus griseus</i>
Gray Triggerfish	<i>Balistes capriscus</i>
Graysby	<i>Epinephelus cruentatus</i>
Greater Amberjack	<i>Seriola dummerili</i>
Hogfish	<i>Lachnolaimus maximus</i>
Jolthead Porgy	<i>Calamus bajonado</i>
King Mackerel	<i>Scomberomorus cavalla</i>
Knobbed Porgy	<i>Calamus nodosus</i>
Lane Snapper	<i>Lutjanus synagris</i>
Lesser Amberjack	<i>Seriola fasciata</i>
Little Tunny	<i>Euthynnus alletteratus</i>
Mahogany Snapper	<i>Lutjanus mahogoni</i>
Margate	<i>Haemulon album</i>
Misty Grouper	<i>Epinephelus mystacinus</i>
Mutton Snapper	<i>Lutjanus analis</i>
Nassau Grouper	<i>Epinephelus striatus</i>

Ocean Triggerfish	Canthidermis sufflamen
Penaeid Shrimp	
Queen Snapper	Etelis oculatus
Queen Triggerfish	Canthidermis sufflamen
Red Drum	Sciaenops ocellatus
Red Grouper	Epinephelus morio
Red Hind	Epinephelus guttatus
Red Porgy	Pagrus pagrus
Red Snapper	Lutjanus campechanus
Rock Hind	Epinephelus adscensionis
Rock Sea Bass	Centropristis philadelphicus
Rock Shrimp	Sicyonia brevirostris
Sailfish	Istiophorus platypterus
Saucereye Porgy	Calamus calamus
Scamp	Mycteroperca phenax
Schoolmaster	Lutjanus apodus
Scup	Stenotomus chrysops
Sharks	(Several species)
Sheepshead	Archosargus probatocephalus
Silk Snapper	Lutjanus vivanus
Snowy Grouper	Epinephelus niveatus
Spanish Mackerel	Scomberomorus maculatus
Speckled Hind	Epinephelus drummondhayi
Spiny Lobster	Panulirus argus
Swordfish	Xiphias gladius
Tiger Grouper	Mycteroperca tigris
Tomtate	Haemulon aurolineatum
Vermilion Snapper	Rhomboplites aurorubens
Wahoo	Acanthocybium Solanderi
Warsaw Grouper	Epinephelus nigritus
Weakfish	Cynoscion Regalis
White Grunt	Haemulon plumier
White Marlin	Tetrapturus albidus
Whitebone Porgy	Calamus leucosteus
Wreckfish	Polyprion americanus
Yellowfin Grouper	Mycteroperca venenosa
Yellowfin Tuna	Thunnus albacares
Yellowmouth Grouper	Mycteroperca interstitialis
Yellowtail Snapper	Ocyrus chrysurus

Erin A. Haight

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June 24, 2003

MEMORANDUM

TO: Mickey Suggs, COE
FROM: Todd Miller
SUBJECT: Preliminary Comments on the Bogue Inlet Draft Report

Below are comments from my very preliminary review of the engineering report that was given to the PDT back in April. You encouraged team members to provide some feedback on the report at our last meeting. Please note that many of the Figures in the report are missing (at least on the CD we were given).

1. Section 2.1: The primary purposes of the project is to protect private property at Bogue Inlet and to provide a source of beach quality sand for beach renourishment. It is not the purpose of the project to create a “stable” channel. The relocated channel will be no more “stable” than the existing channel. Use of this word throughout the document gives the impression that the new channel will be safer and easier to navigate—which it will not except perhaps in the initial months after construction.
2. Section 3.10 states that “... In contrast to the net accretion recorded along Bogue Banks, chronic erosion has been the norm along the Bear Island oceanfront since 1973.” Actually, according to the Inlet Atlas (1999), Bear Island Oceanfront appeared to accrete near Bogue Inlet between 1974 and 1985. Rapid oceanfront erosion has occurred since 1985. While net erosion ranged from 68 feet at transect 37 to 531 feet at transect 25 since 1973, these erosion rates would be much higher if 1985 were used as the baseline for measurements. The erosion rates would be substantially larger if 1959 was used as the baseline.
3. Section 3.17 states that “...The eastward migration of the ebb channel and the attendant morphologic changes in the inlet system has not only controlled the shoreline change patterns along Bogue Banks, but concurrently they have played a significant role in the Bear Island oceanfront erosion.... The data show there has been a net shoreline loss along the majority of Bear Island. The greatest losses have occurred since the late 1980s when the ebb delta and the inlet throat began to assume their current morphologic identities...The complex interaction of the above variables combined to produce a reconfigured barrier that was increasingly exposed to increased wave activity and hence continued shoreline recession.” If the channel is moved back to the west (and happens to continue to migrate to the west after it is moved), what will be the impact on Bogue Banks oceanfront? The report states that the entire shoreline of Bear Island (approximately 3 miles) has been impacted by the movement of the channel in Bogue Inlet. If that is true, what is the basis for determining that a much smaller reach of Bogue Banks will be impacted by this project? What are the chances that the extent of erosion now occurring on Bear Island will, as a result of this project, begin to take place on Bogue Banks? Since no

estimates of future shoreline changes can be precise, please provide upper and lower estimates of shoreline changes and probabilities of such changes occurring.

4. Section 3.18 documents shoreline changes beginning in 1976 for Dudley's Island. During this period of time, the inlet channel location shifted from the middle of the inlet to its current easterly location. Between 1938 and 1976, the inlet channel shifted back and forth from the western side to the middle of the inlet. Photos in the Inlet Atlas seem to show rapid shoreline erosion on Dudley Island's prior to 1976. Figure 3.22 should include much more historical data (at least back to 1938) so we can get a longer term perspective of the impact of the channel's location of erosion rates on Dudley Island. Without this additional data, there is no basis to conclude that the rapid erosion of Dudley Island shorelines is "...primarily due to the eastward migration of the ebb channel; the attendant spit growth along the Bogue Banks shoulder, and the consequent migration of the Eastern Channel toward Dudley Island." The time period examined to draw that conclusion provides no other inlet channel configurations upon which to compare erosion rate impacts on Dudley Island.
5. There is no discussion about what relationships may exist, if any, between Bogue Inlet, Bear Inlet, and Beaufort Inlet. All three inlets influence the tidal exchanges in Bogue Sound, the White Oak River, and the waters behind Bear Island. While the location of Bear Inlet has been relatively stable, its width has ranged from 300 meters in 1956 to 780 meters in 1938. Does the width of Bear Inlet have any influence over the width of Bogue Inlet? Photos in the Inlet Atlas make it appear that when Bear Inlet is wide, Bogue Inlet narrows, and vice versa. Is there any relationship between these two inlets? If there is a relationship, how does this relationship effect oceanfront erosion rates on Bear Island and Bogue Banks? In addition, has the recent deepening of Beaufort Inlet had any impact on the tidal exchanges through Bogue Inlet? If so, what effect would these changes have on the width of Bogue Inlet, and future projections of inlet changes based upon historical data?
6. Section 3.25 and subsequent Sections discuss shoreline adjustments that are predicted to occur on Bogue Banks and Bear Island. The accuracy of these predictions are crucial to whether this project is highly successful or a colossal and very expensive failure. As requested above, additional historical data on shoreline changes at least dating back to 1938 are necessary to fully understand the amount of shoreline change that might potentially occur when the inlet channel is relocated. If Bogue Inlet, Bear Inlet, and Beaufort Inlet do interact as well, changes in those inlet systems need to be factored into any future predictions about Bogue Inlet. If oceanfront erosion rates on Bear Island were measured beginning in 1959 they would be substantially greater than what is reported to have occurred since 1974. Those rates would also increase substantially if the shoreline as it was positioned in 1985 is used as the baseline for measurements. The conclusion that erosion on Bogue Banks after the channel is relocated will follow a similar pattern to the erosion that has occurred on Bear Island in the past decade is probably correct—but the magnitude of erosion that has occurred on Bear Island seems to be significantly under-reported in the Study by using 1973 as the baseline for measurements. In 1999, Cleary predicted in the Inlet Atlas that

Bogue Inlet's channel would likely reposition on its own back to the west. The fact that this prediction has not yet occurred underscores the speculative nature of all estimates of future inlet behavior.

7. The report states that the artificial repositioning of the channel to a more central location between Bogue Banks and Bear Island will essentially emulate a major shift in the channel location similar to what occurred during the mid 1970's. In 1974, the inlet channel was located at approximately the location where the proposed new channel is to be located by this project. When the channel was in the middle of the inlet in 1974, there was significant erosion occurring threatening homes on Bogue Banks at the inlet. Could this happen again as a result of this project?
8. Section 3.32 states that "...neither scenario is expected to have a direct negative impact on the integrity of Island 2." There is no factual basis to make this claim. Photos from 1938, 1959, 1962, and 1974 when the channel was located towards the west and then center of the inlet show that the island did not exist during those periods. In all likelihood, island number two will disappear and be replaced either by new islands or become parts of sand spits extending out from either Bear Island or Bogue Banks. Again, the report needs to use all the data that is available for the inlet and not only data that available since 1973 or later.
9. Based upon my own observations over the past several months, very coarse shell hash comprises a portion of the western shoreline of Island #1. Would the existence of this shell hash have been predicted by the cores that have been collected? There is also a layer of silt and dark sand along the northern shoreline of Island #2. Would this silt and dark sand have been predicted by the cores that have been collected?
10. Section 5.4. outlines the design of channel cross-section. It states that the shallowest depths in the existing inlet channel are 8 feet as the channel crosses on the ebb tidal delta. On our field trip June 10, the captain reported depths of 4 to 6 feet on the ebb tidal delta one week after the channel had been dredged. Is 8 feet correct or simply the "authorized" depth that is seldom obtained through the existing maintenance dredging that takes place? What is the average actual depth on the channel between times that it is dredged? Please compare the actual size of the existing channel to the one that is proposed by this project, taking into account the planned dredging of shoals that are situated between existing deep water in the inlet itself.
11. Section 6.8 discusses logistics of dike construction. Please outline what will happen to estimates of amount of sand required for the dike, time of construction, etc. if the dredge cannot work without interruptions while the dike is being constructed. For example, if weather forces the dredge to shutdown partway through construction, what type of erosion will occur along the partly built dike, and how much additional sand might be needed to complete the job? Since sand for the dredging will be obtained after the new channel has been opened, is there a chance that all authorized areas for dredging could be completed prior to obtaining enough sand to build the

dike, especially if the job encounters delays due to weather or mechanical breakdowns?

12. Section 6.10 concludes that the turbidity standard for tidal saltwater (as well as for SA, SB and ORW waters) will not be violated. This is simply absurd given the nature of this project and the direct disposal of dredge spoil that is proposed into the water column. This Section needs to be further developed to address the following water quality standard issues: (a) Within the area of the proposed dike, the EMC's water quality standards listed at NCAC .0220 require that the water column be protected for its best usages and remain suitable for aquatic life. The project will completely fill a large area of open saltwater. How can these water quality standards not be violated since the project is designed to eliminate the water column through construction of the dike? (b) The Turbidity standards requires that: "the turbidity in the receiving water shall not exceed 25 NTU." How can open water disposal of dredge spoil realistically be expected to achieve this limit? The burden is on the applicant to show it will be in compliance with water quality standards—and data needs to be presented from other dredging projects to show that there will be no violations of standards. If violations are expected to occur, than the applicants should explore whether or not variances can be granted from these water quality standards—not ignore that violations will be taking place.
13. Section 8.1 provides a figure of what is anticipated to occur in terms of redistributed sediment once the channel is relocated. As requested in early comments, this projection needs to be based upon more complete historical information. The Inlet Atlas shows that in 1962 the channel was located in approximately the same location as the proposed new channel. Between 1962 and 1973, Figure 3.4 indicates that the main channel had moved and snaked slightly east of the center of the inlet. Even though the channel was still a long way from Bogue Banks, rapid erosion was taking place at the end of Coast Guard road and houses were threatened (and moved). Please explain why Bogue Banks was eroding so rapidly even while the channel was many hundreds of yards west of the island. Could this pattern of redistributed sediment occur as a result of this project? Why or why not?
14. Economic Benefits of the project should include: a. Please provide data sheets that show the estimated values of private property that will be saved. Do the values reflect current tax values for the waterfront homes at the inlet? Which homes to be saved by the project are likely to still be protected by the time the project gets underway? There also needs to be a clear understanding of how the project will impact private property ownership since many of these existing waterfront lots are now severely eroded and everything below sea level currently belongs to the public; b. Value of Streets and Public Infrastructure Saved - The value of existing public infrastructure (streets, etc.) appears to be based on what they cost to construct. If the private property served by this infrastucture washes away, the Town will have no on-going future expenses associated with operating and maintaining this infrastucture. Also, doesn't the infrastructure have a depreciated value? I would assume that over time this infrastucture is an on-going expense to the Town that is paid for through

fees and property taxes--and thus there is really no cost or benefit associated with maintaining it.

15. Economic Costs of the Project should include: a. What is the value of oceanfront properties on Bogue Banks and Dudley's Island that are projected to experience erosion as a result of the channel relocation? Will the oceanfront lots that erode as a result of this project become less valuable? (Would someone be as willing to buy one of these lots if they see that it is eroding?) Since it is projected that the project will cause these oceanfront lots to erode and become smaller, does the town need to obtain permission from each individual landowner to proceed with the project? What potential financial liabilities exist for the Town when property owners realize the project is causing their lots to erode? If more erosion occurs than has been projected, what could be the potential financial liability for the town property if oceanfront lots become non-conforming in their size? A few years ago Dudley's Island was on the market for \$600,000. What impact will this project have on its value?
16. Other Economic Costs of the Project need to be estimated: a. If the project results in restrictions on public use of recreational beaches adjacent to the inlet due to permit conditions to protect wildlife resources, what will be the economic impact of this lost recreational use? What will it cost the Town to mitigate lost recreational uses? b. At our PDT meeting several months ago, Cleary predicted that the inlet channel will keep migrating east for the foreseeable future. If that prediction is correct, will movement of the channel to the east cause Bear Island to migrate to the east and grow larger? Existing shoaling now occurring on the east end of Bear Island makes it appear that this eastern migration of Bear Island may now be occurring. The Attached report entitled: Estimating the Total Economic Value of Undeveloped Coastal Barriers in the Coastal Barrier Resources System and the Impact of Development on that Value places economic values on undeveloped barrier islands. Using this report, what will be the economic losses that will result from this project if Bear Island is not allowed to migrate east?
17. If predictions of oceanfront erosion on Bogue Banks are too low, losses of valuable private oceanfront property could escalate catastrophically. Provide projected loss data if erosion estimates are increased by 25%, 50%, 100%, and 200%.
18. The purpose of the EIS is to give decision-makers complete information upon which to base decisions about whether or not it is prudent to go forward with a project. In this case, decision-makers need a full appreciation of what financial and legal liabilities (costs) might be assumed by the Town or State if the project causes unanticipated impacts (such a more severe oceanfront erosion on Bogue Banks or Bear Island.) The cost/benefit analysis needs to include these potential costs to give decision-makers not only best case, but worse case, scenarios (with probabilities) upon which to make informed judgments. A legal analysis would be helpful that fully explores what legal responsibilities will be assumed by the Town (and others) if this project proceeds and unanticipated harm occurs as a direct result of channel relocation.

These are some preliminary comments based upon my first review of the draft report. As the EIS proceeds, NCCF will circulate documents to people with expertise on certain issues to make sure we can provide useful feedback on a broader range of technical issues.

June 26, 2003

MEMORANDUM

TO: Mickey Suggs, COE
FROM: Tom Jarrett (Response Comments to Todd Miller)
SUBJECT: Preliminary Comments on the Bogue Inlet Draft Report

Todd Miller (TM): Below are comments from my very preliminary review of the engineering report that was given to the PDT back in April. You encouraged team members to provide some feedback on the report at our last meeting. Please note that many of the Figures in the report are missing (at least on the CD we were given).

Tom Jarrett (TJ): Responses to comments provided by Todd Miller are provided in bold following each comment.

1. (TM) Section 2.1: The primary purposes of the project is to protect private property at Bogue Inlet and to provide a source of beach quality sand for beach renourishment. It is not the purpose of the project to create a “stable” channel. The relocated channel will be no more “stable” than the existing channel. Use of this word throughout the document gives the impression that the new channel will be safer and easier to navigate—which it will not except perhaps in the initial months after construction.

(TJ) Response: The use of the word “stable” in the early sections of the report only refers to the hydraulic stability of the channel. A discussion on the horizontal stability of the channel is provided in paragraphs 5.17 to 5.19. This discussion clearly indicates that the channel could migrate to the west or to the east in much the same manner as the existing channel. However, given the propensity of the bar channel to historically migrate to the east, the relocated channel is expected to migrate to the east.

2. (TM) Section 3.10 states that “... In contrast to the net accretion recorded along Bogue Banks, chronic erosion has been the norm along the Bear Island oceanfront since 1973.” Actually, according to the Inlet Atlas (1999), Bear Island Oceanfront appeared to accrete near Bogue Inlet between 1974 and 1985. Rapid oceanfront erosion has occurred since 1985. While net erosion ranged from 68 feet at transect 37 to 531 feet at transect 25 since 1973, these erosion rates would be much higher if 1985 were used as the baseline for measurements. The erosion rates would be substantially larger if 1959 was used as the baseline.

(TJ) Response: The Inlet Atlas was prepared by Dr. William J. Cleary and Tara P. Marden. The geomorphic analysis of Bogue Inlet contained in the report, which was also conducted by Dr. Cleary, was considerably more rigorous than the analysis included in the Inlet Atlas. The focus of the geomorphic analysis was on changes in the inlet morphology and changes on the adjacent islands for the period from 1973 to the present, a period of time during which the channel migrated from a central position to a position juxtaposed to the west end of Bogue Banks. Since the proposed channel relocation would reposition the

channel in the same general location and on an alignment similar to that which existed in the mid 1970's, changes in the inlet morphology and the associated changes on the adjacent islands over the period from 1973 to the present were used as a model to predict changes likely to occur once the channel is moved. While other base times could have been used, they would not be representative of changes associated with a centrally located channel.

3. (TM) Section 3.17 states that "...The eastward migration of the ebb channel and the attendant morphologic changes in the inlet system has not only controlled the shoreline change patterns along Bogue Banks, but concurrently they have played a significant role in the Bear Island oceanfront erosion.... The data show there has been a net shoreline loss along the majority of Bear Island. The greatest losses have occurred since the late 1980s when the ebb delta and the inlet throat began to assume their current morphologic identities...The complex interaction of the above variables combined to produce a reconfigured barrier that was increasingly exposed to increased wave activity and hence continued shoreline recession." If the channel is moved back to the west (and happens to continue to migrate to the west after it is moved), what will be the impact on Bogue Banks oceanfront? The report states that the entire shoreline of Bear Island (approximately 3 miles) has been impacted by the movement of the channel in Bogue Inlet. If that is true, what is the basis for determining that a much smaller reach of Bogue Banks will be impacted by this project? What are the chances that the extent of erosion now occurring on Bear Island will, as a result of this project, begin to take place on Bogue Banks? Since no estimates of future shoreline changes can be precise, please provide upper and lower estimates of shoreline changes and probabilities of such changes occurring.

(TJ) Response: The analysis of shoreline changes on Bogue Banks and Bear Island included 7,500 feet of shoreline east and west of the inlet respectively. Predictions of average and possible maximum shoreline changes on both islands within these 7,500-foot sections are provided in paragraphs 3.25 to 3.29. Also included are estimates of the volumetric changes associated with the shoreline adjustments and estimated time periods for these shoreline adjustments to occur. No predictions were made for Bear Island beyond the 7,500-foot section included in the analysis. Also, there is no mathematical basis for assigning probabilities to the predicted average and maximum shoreline adjustments.

4. (TM) Section 3.18 documents shoreline changes beginning in 1976 for Dudley's Island. During this period of time, the inlet channel location shifted from the middle of the inlet to its current easterly location. Between 1938 and 1976, the inlet channel shifted back and forth from the western side to the middle of the inlet. Photos in the Inlet Atlas seem to show rapid shoreline erosion on Dudley Island's prior to 1976. Figure 3.22 should include much more historical data (at least back to 1938) so we can get a longer term perspective of the impact of the channel's location of erosion rates on Dudley Island. Without this additional data, there is no basis to conclude that the rapid erosion of Dudley Island shorelines is "...primarily due to the eastward migration of the ebb channel; the attendant spit growth along the Bogue Banks shoulder, and the consequent migration of the Eastern Channel toward Dudley

Island.” The time period examined to draw that conclusion provides no other inlet channel configurations upon which to compare erosion rate impacts on Dudley Island.

(TJ) Response: Of the six aerial photos included in the Inlet Atlas, only the 1938, 1974, and 1996 photos include coverage of Dudley Island. cursory examination of these aerial photos does not support the conclusion that Dudley Island was eroding prior to 1974. While the morphology of the inlet changed dramatically between 1938 and 1974, particularly with respect to the extend of the middle ground shoal fronting Dudley Island, the south shoreline of Dudley Island actually appears to have accreted between 1938 and 1974. The analysis of changes in Dudley Island since 1976 included in the report clearly demonstrates that major erosion at transects 2 through 5 on Dudley Island began around 1984, which corresponds to the time when the Bogue Banks sand spit became fully developed (see Figure 3.23 in the report).

5. (TM) There is no discussion about what relationships may exist, if any, between Bogue Inlet, Bear Inlet, and Beaufort Inlet. All three inlets influence the tidal exchanges in Bogue Sound, the White Oak River, and the waters behind Bear Island. While the location of Bear Inlet has been relatively stable, its width has ranged from 300 meters in 1956 to 780 meters in 1938. Does the width of Bear Inlet have any influence over the width of Bogue Inlet? Photos in the Inlet Atlas make it appear that when Bear Inlet is wide, Bogue Inlet narrows, and vice versa. Is there any relationship between these two inlets? If there is a relationship, how does this relationship effect oceanfront erosion rates on Bear Island and Bogue Banks? In addition, has the recent deepening of Beaufort Inlet had any impact on the tidal exchanges through Bogue Inlet? If so, what effect would these changes have on the width of Bogue Inlet, and future projections of inlet changes based upon historical data?

(TJ) Response: The relocation of the Bogue Inlet ebb tide channel would not change the tidal exchange or tidal prism of Bogue Inlet; therefore, there would not be any impact on tidal flow through Bear Inlet. If there is a relationship between the size of Bear Inlet and Bogue Inlet, simply moving the channel to a more central location would not impact this relationship. If tidal flow through Bogue Inlet was impacted by the deepening of Beaufort Inlet in 1994, this change would have already been manifest in the size or cross-sectional area of Bogue Inlet. However, changes in Beaufort Inlet probably did not impact Bogue Inlet as the nodal point of tidal flow through Beaufort Inlet, i.e., the point in Bogue Sound where tidal flow through Beaufort Inlet and Bogue Inlet meet, is probably located somewhere between Sanders Creek and Gales Creek. The approximate location of the nodal point was based on the speed of propagation of the tidal wave in Bogue Sound.

6. (TM) Section 3.25 and subsequent Sections discuss shoreline adjustments that are predicted to occur on Bogue Banks and Bear Island. The accuracy of these predictions are crucial to whether this project is highly successful or a colossal and very expensive failure. As requested above, additional historical data on shoreline changes at least dating back to 1938 are necessary to fully understand the amount of shoreline change that might potentially occur when the inlet channel is relocated. If

Bogue Inlet, Bear Inlet, and Beaufort Inlet do interact as well, changes in those inlet systems need to be factored into any future predictions about Bogue Inlet. If oceanfront erosion rates on Bear Island were measured beginning in 1959 they would be substantially greater than what is reported to have occurred since 1974. Those rates would also increase substantially if the shoreline as it was positioned in 1985 is used as the baseline for measurements. The conclusion that erosion on Bogue Banks after the channel is relocated will follow a similar pattern to the erosion that has occurred on Bear Island in the past decade is probably correct—but the magnitude of erosion that has occurred on Bear Island seems to be significantly under-reported in the Study by using 1973 as the baseline for measurements. In 1999, Cleary predicted in the Inlet Atlas that Bogue Inlet’s channel would likely reposition on its own back to the west. The fact that this prediction has not yet occurred underscores the speculative nature of all estimates of future inlet behavior.

(TJ) Response: The purpose of the geomorphic analysis was to evaluate changes associated with moving the channel to a more central location. To do this, the period from 1973 to the present was selected. During this time, the channel migrated from a central position and perpendicular alignment to a position next to Bogue Banks. The changes that occurred to Bogue Banks, Bear Island, and the inlet during this period, or the inverse of these changes, were taken as a model of changes likely to occur if the channel is again reposition to a central location. The basis of the statement that shoreline erosion rates on Bear Island since 1959 have been substantially greater is not clear. The shoreline change rates published by the State of North Carolina Division of Coastal Management through 1992, which covers the period from 1938 to 1992, indicate that Bear Island was accreting during this period.

7. (TM) The report states that the artificial repositioning of the channel to a more central location between Bogue Banks and Bear Island will essentially emulate a major shift in the channel location similar to what occurred during the mid 1970’s. In 1974, the inlet channel was located at approximately the location where the proposed new channel is to be located by this project. When the channel was in the middle of the inlet in 1974, there was significant erosion occurring threatening homes on Bogue Banks at the inlet. Could this happen again as a result of this project?

(TJ) Response: The erosion that was occurring on the west end of Bogue Banks in the early to mid 1970’s was associated with a secondary flood channel that was positioned immediately adjacent to the west end of the island not the position of the main ebb channel. The proposed channel relocation project includes the closure of the existing channel which should prevent the formation of a secondary flood channel.

8. (TM) Section 3.32 states that “...neither scenario is expected to have a direct negative impact on the integrity of Island 2.” There is no factual basis to make this claim. Photos from 1938, 1959, 1962, and 1974 when the channel was located towards the west and then center of the inlet show that the island did not exist during those periods. In all likelihood, island number two will disappear and be replaced either by new islands or become parts of sand spits extending out from either Bear Island or

Bogue Banks. Again, the report needs to use all the data that is available for the inlet and not only data that available since 1973 or later.

(TJ) Response: Island 2 did not exist until 1995/1996. The island appears to be migrating rapidly to the west. Between September 2001 and September 2002, the island appeared to have migrated 1,000 feet to the west. An aerial photo taken by the Corps of Engineers in March 2003 indicated that the island had migrated an additional 600 feet between September 2002 and March 2003. Therefore, over the 18 month period, Island 2 has migrated close to 1,600 feet to the west which represents a rate of approximately 90 feet/month. Should this rate of westerly migration continue, Island 2 will move completely into the Western Channel by March 2004.

9. (TM) Based upon my own observations over the past several months, very coarse shell hash comprises a portion of the western shoreline of Island #1. Would the existence of this shell hash have been predicted by the cores that have been collected? There is also a layer of silt and dark sand along the northern shoreline of Island #2. Would this silt and dark sand have been predicted by the cores that have been collected?

(TJ) Response: The observation of shell on Island 1 and silt on Island 2 is simply due to a process of selective sorting and has nothing to do with the overall characteristics of the material found in the inlet shoals.

10. (TM) Section 5.4. outlines the design of channel cross-section. It states that the shallowest depths in the existing inlet channel are 8 feet as the channel crosses on the ebb tidal delta. On our field trip June 10, the captain reported depths of 4 to 6 feet on the ebb tidal delta one week after the channel had been dredged. Is 8 feet correct or simply the “authorized” depth that is seldom obtained through the existing maintenance dredging that takes place? What is the average actual depth on the channel between times that it is dredged? Please compare the actual size of the existing channel to the one that is proposed by this project, taking into account the planned dredging of shoals that are situated between existing deep water in the inlet itself.

(TJ) Response: The discussion in paragraph 5.4 was only referencing the depths measured by CSE in October 2001 with depths given relative to NGVD. The 8-foot NGVD depth would be equal to a depth of 6.5 feet at mean low water. A detailed discussion of the expected shoaling of the relocated channel is provided in paragraphs 5.26 to 5.45. The recommended channel is only expected to remain at or below 8-foot mean low water (9.5 feet NGVD) 12 months.

11. (TM) Section 6.8 discusses logistics of dike construction. Please outline what will happen to estimates of amount of sand required for the dike, time of construction, etc. if the dredge cannot work without interruptions while the dike is being constructed. For example, if weather forces the dredge to shutdown partway through construction, what type of erosion will occur along the partly built dike, and how much additional

sand might be needed to complete the job? Since sand for the dredging will be obtained after the new channel has been opened, is there a chance that all authorized areas for dredging could be completed prior to obtaining enough sand to build the dike, especially if the job encounters delays due to weather or mechanical breakdowns?

(TJ) Response: Dike construction was conservatively estimated to take 9.5 days based on an average production rate of 900 cy/hr. The actual production rate may approach 1,500 cy/hr in which case the dike could be completed in only 6 days. Accordingly, the estimate implicitly includes 3.5 days of downtime which could be for weather or mechanical problems. Once the new channel connects with the existing channel that swings to the east as it exits past Island 2, enough flow would be established to allow construction of the dike. Material to construct the dike would be obtained exclusively from the area of the middle ground shoal located between the existing channel and Dudley Island.

12. (TM) Section 6.10 concludes that the turbidity standard for tidal saltwater (as well as for SA, SB and ORW waters) will not be violated. This is simply absurd given the nature of this project and the direct disposal of dredge spoil that is proposed into the water column. This Section needs to be further developed to address the following water quality standard issues: (a) Within the area of the proposed dike, the EMC's water quality standards listed at NCAC .0220 require that the water column be protected for its best usages and remain suitable for aquatic life. The project will completely fill a large area of open saltwater. How can these water quality standards not be violated since the project is designed to eliminate the water column through construction of the dike? (b) The Turbidity standards requires that: "the turbidity in the receiving water shall not exceed 25 NTU." How can open water disposal of dredge spoil realistically be expected to achieve this limit? The burden is on the applicant to show it will be in compliance with water quality standards—and data needs to be presented from other dredging projects to show that there will be no violations of standards. If violations are expected to occur, than the applicants should explore whether or not variances can be granted from these water quality standards—not ignore that violations will be taking place.

(TJ) Response: Obviously, construction of the dike will violate water quality standards in the immediate area of the dike. Due to the relatively low silt content of the inlet shoal material, silt concentrations landward and seaward of the dike will generally range between 6 and 4 ppm respectively. While there is no direct connection between ppm and NTU's, the relatively low silt concentrations should not violate EMC's water quality standards. In any event, this will be taken up with the N.C. Division of Water Quality through the 401 permit process to determine if mitigative measures will be necessary.

13. (TM) Section 8.1 provides a figure of what is anticipated to occur in terms of redistributed sediment once the channel is relocated. As requested in early comments, this projection needs to be based upon more complete historical information. The Inlet Atlas shows that in 1962 the channel was located in approximately the same location as the proposed new channel. Between 1962 and

1973, Figure 3.4 indicates that the main channel had moved and snaked slightly east of the center of the inlet. Even though the channel was still a long way from Bogue Banks, rapid erosion was taking place at the end of Coast Guard road and houses were threatened (and moved). Please explain why Bogue Banks was eroding so rapidly even while the channel was many hundreds of yards west of the island. Could this pattern of redistributed sediment occur as a result of this project? Why or why not?

(TJ) Response: As discussed in response to Comment 7, the erosion on the west end of Bogue Banks during the early to mid 1970's was associated with a secondary flood channel not the primary ebb channel. Formation of a secondary flood channel next to the west end of Bogue Banks will be prevented by the closure of the existing ebb channel.

14. (TM) Economic Benefits of the project should include: a. Please provide data sheets that show the estimated values of private property that will be saved. Do the values reflect current tax values for the waterfront homes at the inlet? Which homes to be saved by the project are likely to still be protected by the time the project gets underway? There also needs to be a clear understanding of how the project will impact private property ownership since many of these existing waterfront lots are now severely eroded and everything below sea level currently belongs to the public; b. Value of Streets and Public Infrastructure Saved - The value of existing public infrastructure (streets, etc.) appears to be based on what they cost to construct. If the private property served by this infrastructure washes away, the Town will have no on-going future expenses associated with operating and maintaining this infrastructure. Also, doesn't the infrastructure have a depreciated value? I would assume that over time this infrastructure is an on-going expense to the Town that is paid for through fees and property taxes--and thus there is really no cost or benefit associated with maintaining it.

(TJ) Response: The value of properties used in the analysis was based on the current tax value not the fair market price. Tax values generally represent depreciated-replacement values. A table listing the value of the individual properties that would be saved during each 2-year increment of the analysis will be provided in the final draft of the report. The logic with regard to the maintenance of the town's infrastructure is not clear. Obviously, once infrastructure is lost, the town would no longer have any expense to maintain it. However, maintenance costs are relatively low and have no bearing on the overall economic impact associated with the lost of buildings and infrastructure.

15. (TM) Economic Costs of the Project should include: a. What is the value of oceanfront properties on Bogue Banks and Dudley's Island that are projected to experience erosion as a result of the channel relocation? Will the oceanfront lots that erode as a result of this project become less valuable? (Would someone be as willing to buy one of these lots if they see that it is eroding?) Since it is projected that the project will cause these oceanfront lots to erode and become smaller, does the town need to obtain permission from each individual landowner to proceed with the

project? What potential financial liabilities exist for the Town when property owners realize the project is causing their lots to erode? If more erosion occurs than has been projected, what could be the potential financial liability for the town property if oceanfront lots become non-conforming in their size? A few years ago Dudley's Island was on the market for \$600,000. What impact will this project have on its value?

(TJ) Response: With regard to Dudley Island, moving the channel and closure of the existing channel is predicted to cause a temporary cessation in the erosion that is occurring due to the continued northward growth of the Bogue Banks sand spit. Once the existing channel completely fills and the spit redevelops and moves past the dike, erosion of Dudley Island may begin anew. The time require for these developments to occur could be 5 to 10 years. The oceanfront lots for a distance of 7,500 feet east of Bogue Inlet have been predicted to erode as much as 350 to 400 feet near the inlet to around 10 feet 7,500 feet east of the inlet. Due to the accretion of the shoreline in this area since 1976, the erosion is not expected to cause any substantial risk to existing development in this area. However, erosion of this section of Emerald Isle has been acknowledged from the very beginning of the project plan formulation process and was mentioned during the preliminary interviews by the town during its AE selection process. The acceptance of the project by the affected property owner is something the Town of Emerald Isle will have to address.

16. (TM) Other Economic Costs of the Project need to be estimated: a. If the project results in restrictions on public use of recreational beaches adjacent to the inlet due to permit conditions to protect wildlife resources, what will be the economic impact of this lost recreational use? What will it cost the Town to mitigate lost recreational uses? b. At our PDT meeting several months ago, Cleary predicted that the inlet channel will keep migrating east for the foreseeable future. If that prediction is correct, will movement of the channel to the east cause Bear Island to migrate to the east and grow larger? Existing shoaling now occurring on the east end of Bear Island makes it appear that this eastern migration of Bear Island may now be occurring. The Attached report entitled: Estimating the Total Economic Value of Undeveloped Coastal Barriers in the Coastal Barrier Resources System and the Impact of Development on that Value places economic values on undeveloped barrier islands. Using this report, what will be the economic losses that will result from this project if Bear Island is not allowed to migrate east?

(TJ) Response: During the period from 1973 to the present, the east end of Bear Island eroded while the channel was migrating to the east. Therefore, there does not appear to be a direct correlation between the position of the channel the eastward growth of Bear Island. However, there is a definite relationship between erosion of the ocean shoreline on Bear Island and the channel position. Since 1973, the eastern 7,500-foot section of Bear Island has lost between 40 and 45 acres. Moving the channel to a central location would reverse the shoreline losses and could eventually restore the lost acreage.

17. (TM) If predictions of oceanfront erosion on Bogue Banks are too low, losses of valuable private oceanfront property could escalate catastrophically. Provide projected loss data if erosion estimates are increased by 25%, 50%, 100%, and 200%.

(TJ) Response: The prediction of erosion on the west end of Emerald Isle included average erosion amounts and possible maximum shoreline recessions. The assessment of increased risk of damage due to storm was based on maximum shoreline recessions. While properties located within the westernmost 7,500 feet of Emerald Isle would be subjected to some increased risk of damage during severe coastal storms, the increased risk was low and should not impact property values. Even with the predicted erosion, the width of the beach remaining in front of the buildings would still be larger than the width of beach existing in front of oceanfront structures east of the impact area.

18. (TM) The purpose of the EIS is to give decision-makers complete information upon which to base decisions about whether or not it is prudent to go forward with a project. In this case, decision-makers need a full appreciation of what financial and legal liabilities (costs) might be assumed by the Town or State if the project causes unanticipated impacts (such a more severe oceanfront erosion on Bogue Banks or Bear Island.) The cost/benefit analysis needs to include these potential costs to give decision-makers not only best case, but worse case, scenarios (with probabilities) upon which to make informed judgments. A legal analysis would be helpful that fully explores what legal responsibilities will be assumed by the Town (and others) if this project proceeds and unanticipated harm occurs as a direct result of channel relocation.

(TJ) Response: The EIS will include estimates of possible mitigative measures that the Town of Emerald Isle may have to implement to respond to unexpected developments, including shoreline erosion amounts greater than those predicted.

(TM) These are some preliminary comments based upon my first review of the draft report. As the EIS proceeds, NCCF will circulate documents to people with expertise on certain issues to make sure we can provide useful feedback on a broader range of technical issues.



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

July 16, 2003

Regulatory Division

Action ID No. 200100632

JUL 24 2003
4500-02
CK. EH

Mr. Eric Hawk
National Marine Fisheries Service
Southeast Regional Office
Protective Resource Division
9721 Executive Center Drive North
St. Petersburg, Florida 33702-2432

Dear Mr. Hawk:

This letter serves to provide your agency with a copy of the revised Biological Assessment (BA), dated June 2003, for the Town of Emerald Isle's proposal to relocate Bogue Inlet Channel, between Emerald Isle and Hammocks Beach State Park (Bear Island, Carteret County, North Carolina). The project purpose is to protect residential homes and town infrastructures, and to place the dredged material on approximately 4.0 miles of beach for nourishment. Please reference your March 3, 2002 letter concerning the project effects on threatened and endangered species pursuant to the Endangered Species Act of 1973 under purview of the National Oceanic and Atmospheric Administration (NOAA) Fisheries.

In your letter, you stated that the proposed action is not likely to adversely affect any Federally-listed species under NOAA Fisheries purview, and concluded our office's consultation responsibilities under Section 7 of the Endangered Species Act. The enclosed revised BA is provided to your office to update you on the progress of the project. Our office acknowledges that if any substantive changes to the project design or methods are made, which may potentially impact any listed species, consultation with your office will be reinitiated.

If there are any elements of the project in the revised BA that raise concerns in your office, please do not hesitate to contact Mr. Mickey Sugg, Wilmington Regulatory Field Office, at (910) 251-4811.

Sincerely,

S. Kenneth Jolly, Chief
Regulatory Division

Enclosure

Copies furnished (w/o enclosure):

Ms. Tere Barrett
Division of Coastal Management
North Carolina Department of
Environment and Natural Resources
151-B Hestron Plaza, NC Hwy 24
Morehead City, North Carolina 28557

Mr. Doug Huggett
Division of Coastal Management
North Carolina Department of Environment
and Natural Resources
1638 Mail Service Center
Raleigh, North Carolina 27699-1638

Mr. Ron Sechler
NOAA Fisheries
101 Pivers Island Road
Beaufort, North Carolina 28516

Mayor Art Schools
Town of Emerald Isle
7500 Emerald Drive
Emerald Isle, North Carolina 28594-9320

Mr. Frank Rush
Town of Emerald Isle
7500 Emerald Drive
Emerald Isle, North Carolina 28594-9320

Mr. Tom Jarrett
Coastal Planning & Engineering
204 Dorchester Place
Wilmington, North Carolina 28412

✓ Mr. Craig Kruempel
Coastal Planning & Engineering
2481 N.W. Boca Raton Boulevard
Boca Raton, Florida 33431

Mr. Garland Purdue
U.S. Fish and Wildlife Service
Post Office Box 33726
Raleigh, North Carolina 27636-3726



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

July 16, 2003

Regulatory Division

Action ID No. 200100632

JUL 24 2003
4500 02
CK, EHI

Dr. Garland Purdue
U.S. Fish and Wildlife Service
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Dear Dr. Purdue:

This letter serves to provide your agency with a revised Biological Assessment (BA), dated June 2003, for the Town of Emerald Isle's proposal to relocate Bogue Inlet Channel. The project purpose is to protect residential homes and town infrastructures, and to place the dredged material on approximately 4.0 miles of beach for nourishment. Please reference our December 4, 2002 letter initiating informal consultation for project effects on threatened and endangered species pursuant to the Endangered Species Act of 1973 under purview of US Fish and Wildlife Service.

The enclosed BA has been revised to reflect the recommendations disclosed in your January 31, 2003 letter. We have determined that the dredging and filling of the channel(s) and disposal of material associated with the beach nourishment is likely to adversely affect sea beach amaranth (*Amaranthus pumilus*); the following nesting sea turtle species: Loggerhead (*Caretta caretta*), Kemp's ridley (*Lepidochelys kempi*), and Green (*Chelonia mydas*); and Piping Plover (*Charadrius melodus*) and Piping Plover Critical Habitat.

As you are aware, our office authorized a 16.8-mile beach nourishment activity along Bogue Banks, which included Emerald Isle as a co-permittee. This permit was issued on October 26, 2001. During the review of the permit, your office stated that the material, extracted from an offshore borrow area, has the potential to impact Federally-listed species of specified nesting turtles and seabeach amaranth. Based on FWS' concerns during informal consultation, the permittees agreed to implement the October 15, 2001 conservation measures and monitoring plan for nesting turtles and seabeach amaranth. Accordingly, these measures and monitoring plan were incorporated in our permit for that nourishment activity. The current project encompasses an approximate 4.0-mile stretch of the 16.8 mile permitted area, and Emerald Isle's proposal has been modified to receive material from the Bogue Inlet Channel Relocation, which contains a more compatible material for the proposed nourishment. A sediment comparison analysis is included in the BA. It is our request that FWS review the October 15, 2001

conservation measures and monitoring plan to determine their applicability to the 4.0-mile stretch of beach that is planned to receive material from the inlet.

If you have questions or comments, they may be addressed to Mr. Mickey Sugg, Wilmington Regulatory Field Office, at (910) 251-4811.

Sincerely,

S. Kenneth Jolly, Chief
Regulatory Division

Enclosure

Copies furnished (without enclosure):

Ms. Tere Barrett
Division of Coastal Management
North Carolina Department of
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151-B Hestron Plaza, NC Hwy 24
Morehead City, North Carolina 28557

Mr. Ronald J. Mikulak, Chief
Wetlands Section- Region IV
U.S. Environmental Protection Agency
61 Forsyth Street, SW
Atlanta, Georgia 30303

Mr. Doug Huggett
Division of Coastal Management
North Carolina Department of Environment
and Natural Resources
1638 Mail Service Center
Raleigh, North Carolina 27699-1638

Mr. Ron Sechler
National Marine Fisheries Service
101 Pivers Island Road
Beaufort, North Carolina 28516

Mayor Art Schools
Town of Emerald Isle
7500 Emerald Drive
Emerald Isle, North Carolina 28594-9320

Mr. Frank Rush
Town of Emerald Isle
7500 Emerald Drive
Emerald Isle, North Carolina 28594-9320

Mr. Tom Jarrett
Coastal Planning & Engineering
204 Dorchester Place
Wilmington North Carolina 28412

Mr. Eric Hawk
National Marine Fisheries Service
Southeast Regional Office
Protective Resource Division
9721 Executive Center Drive North
St. Petersburg, Florida 33702-2432

✓ Mr. Craig Kruempel
Coastal Planning & Engineering
2481 N.W. Boca Raton Boulevard
Boca Raton, Florida 33431

MEMORANDUM

To: Erin Haight
From: Mike Marshall
Date: July 29, 2003
Subject: Draft EFH Assessment Bogue Inlet

Thank you for the opportunity to review the draft. Below are some comments in addition to adding southern flounder and kingfish.

In section 7.0, the amount of shellfish habitat in area C004 as mapped is 85.22 acres. There are 70.19 acres of V stratum and 15.03 acres of W stratum. It appears that the shellfish density per square meter data from Appendix 1 was used as an area measurement. In addition, in section 7.0, 7.1 and 7.2 the statements that there is a percentage likelihood that a particular stratum will contain either oyster or clams is not accurate. The data indicate that the shellfish population is composed of 100% oysters in stratum V and 98% oysters and 2% clams in stratum W. That means that, on average, a particular sample in these strata could be expected to produce 100% oysters in stratum V and 98% oysters and 2% clams in stratum W. Of primary importance is the fact that in stratum V there are 24.06 shellfish per square meter and 76.82 shellfish per square meter in stratum W. Those figures equate (adjusted to harvestable size) to approximately 320 bushels of shellfish per acre in stratum V and 1025 bushels of shellfish (1013 bu. oysters and 12 bu. clams) per acre in stratum W.

There is also some concern about the statement in 7.2 that indicates bay scallops have the ability to voluntarily move to escape unfavorable environmental conditions. While bay scallops do move about, there should be a differentiation between the ability of bay scallops and finned fish to move. The means of locomotion, lack of direction and short duration of the movements may or may not achieve movement to better environmental conditions.

It would also be advisable to discuss the fact that inlet areas are important blue crab spawning sites in section 9.1, even though if the project stays on schedule it will avoid the primary blue crab spawning months.

Please call if you have any questions.

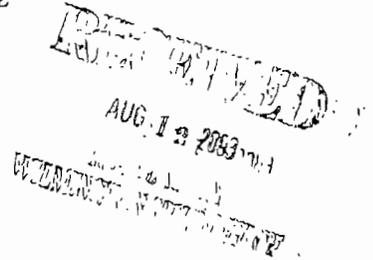
Cc: Clay Caroon
Trish Murphey



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, Florida 33702

August 8, 2003



Colonel Charles R. Alexander, Jr.
District Engineer, Wilmington District
Department of the Army, Corps of Engineers
P. O. Box 1890
Wilmington, North Carolina 28402-1890

Attention: Mr. Mickey Sugg

Dear Colonel Alexander:

The National Marine Fisheries Service (NOAA Fisheries) has reviewed the July 2003, Draft Essential Fish Habitat (EFH) Assessment submitted by the Town of Emerald Isle for the proposed Bogue Inlet Channel Relocation Project (**Action ID No 200100632**). The content, organization, and conclusions of the assessment were discussed in considerable detail with Coastal Planning and Engineering, consultants for the Town of Emerald Isle, during a July 28, 2003, conference call. This letter reiterates several of the more significant issues associated with our review of the subject document and discussion with Coastal Planning and Engineering personnel.

Although the Draft EFH Assessment identifies a wide range of species managed by the South and Mid-Atlantic Fisheries Management Councils, NOAA Fisheries, and others, the document should be limited to EFH and associated Federally managed species found in the area to be impacted by the project. In this regard, we note that the assessment lists and discusses species managed by the Atlantic States Marine Fisheries Commission (ASMFC) and the North Carolina Division of Marine Fisheries. While impacts to these species should be described, such descriptions should be confined to other sections of the Environmental Impact Statement (EIS).

The Draft EFH Assessment lists EFH and associated Federally managed species which occur at the project site. An assessment of the potential adverse effects to the listed habitats and species is also provided. As we pointed out in the above referenced conference call, this format is acceptable; however, important information, such as identification of seagrass as a Habitat Area of Particular Concern for species such as red drum is lacking. Consequently, careful review of the document is needed to ensure that the information needed for a full and meaningful impact assessment is provided.

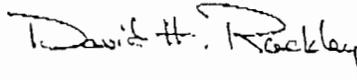


NOAA Fisheries also found sections where certain Federally managed species identified in the document do not utilize the EFH that is under consideration. For example, Section 5.0, ESTUARINE EMERGENT WETLANDS HABITATS (Page 24, Section 5.2) discusses the snapper-grouper complex in connection with estuarine emergent wetlands even though these wetlands are not EFH for this group. We also note that several of the "Effects Determination" sections do not contain sufficient information to support a conclusion that the project would only minimally affect or have no adverse effect on the species identified. The information provided in this section must consider the duration of anticipated impacts as well as impacts to life history stages of managed species. For example, the document should identify and describe affected species and life stages of Federally managed species that utilize the estuarine water column and would be impacted by projected related effects such as elevation of turbidity and sedimentation.

As discussed with Coastal Planning and Engineering personnel, we understand that needed revision of the EFH Assessment may not be completed before release of the Draft EIS. Although we prefer that the assessment be complete at the Draft EIS stage, we are not aware of any requirement for this. We must advise, however, that fulfillment of the EFH consultation requirement cannot be satisfactorily accomplished until an adequate EFH Assessment is provided for our review.

Thank you for the opportunity to review the Draft EFH Assessment. Related comments or questions should be directed to the attention of Mr. Ron Sechler at our Beaufort Facility. He may be reached at 101 Pivers Island Road, Beaufort, North Carolina 28516-9722, or at (252) 728-5090.

Sincerely,



Frederick C. Sutter III
Deputy Regional Administrator

From: Ron Sechler [ron.sechler@noaa.gov]
Sent: Tuesday, August 12, 2003 10:18 AM
To: Erin Haight
Subject: Bogue Inlet EFH Assessment

Erin,

During our telephonic discussion of the Draft EFH Assessment for the Bogue Inlet Channel Relocation project, I indicated that I would discuss the inclusion of DMF, ASMFC information in the EFH document with my supervisor. The guidance received was that the assessment should be limited to Federally managed species. In our response to the COE's request for comments, we identified in general this and other items that need to be addressed for the EFH assessment to adequately address project impacts to EFH. I understand the time constraints associated with this project, but this is an important issue for NOAA Fisheries and one that we've been talking about for a long time. I am available to meet with you at a mutually acceptable time to address any issues associated with the EFH Assessment. However, I recommend that Micky be included in any future discussions of this issue.

Best Regards,

Ron Sechler, Fishery Biologist
NOAA Fisheries
Habitat Conservation Division
101 Pivers Island Road
Beaufort, North Carolina 28516

Phone: 252 728-5090
Email: rsechler@noaa.gov



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

August 19, 2003

Regulatory Division

Action ID. 200100632

AUG 25 2003
4500.02
CR FH

Mr. Frank Rush, Manager
Town of Emerald Isle
7500 Emerald Isle Drive
Emerald Isle, North Carolina 28594-9320

Dear Mr. Rush:

This letter serves to provide the Town of Emerald Isle with National Marine Fisheries Service's (NMFS) comments on the July 2003 Essential Fish Habitat Assessment (EFH) prepared by your agent, Coastal Planning & Engineering. The EFH identifies the potential adverse affects on specific Federally managed fish resources occurring within your proposal to relocate Bogue Inlet Channel and to nourish approximately 4.0 miles of Emerald Isle beach, Emerald Isle, Carteret County, North Carolina. Also, please reference our July 16, 2003 letter.

In response to our July letter to initiate consultation, NMFS has provided our office with their comments in a letter dated August 8, 2003 (copy enclosed). It is strongly recommended that you incorporate these changes into the EFH to ensure adequate review of the potential affects and to expedite the consultation process.

If you have questions or comments, please contact me at (910) 251-4811, Wilmington Regulatory Field Office, and I will assist you in coordinating with the Service.

Sincerely,

Mickey Sugg, Project Manager
Wilmington Regulatory Field Office

Enclosure

Copies Furnished (with enclosure):

Mr. Tom Jarrett
Coastal Planning & Engineering
204 Dorchester Place
Wilmington, North Carolina 28412

↘ Ms. Erin Haight
Coastal Planning & Engineering
2481 N.W. Boca Raton Boulevard
Boca Raton, Florida 33431

Mr. Doug Huggett
Division of Coastal Management
North Carolina Department of
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1638 Mail Service Center
Raleigh, North Carolina 27699-1638

Copies Furnished (without enclosure):

Mr. Ron Sechler, NOAA Fisheries
101 Pivers Island Road
Beaufort, North Carolina 28516-9722

Mayor Art Schools
Town of Emerald Isle
7500 Emerald Drive
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Ms. Tere Barrett
North Carolina Division of Coastal Management
Hestron Plaza Two
151-B Highway 24
Morehead City, North Carolina 28557

Ms. Diane Long
North Carolina Department of
Environment and Natural Resources
1601 Mail Service Center
Raleigh, North Carolina 27699-1601

REPLY TO: James C. Gulick
Environmental Division
jgulick@mail.jus.state.nc.us
Telephone: 919/716-6600
Fax: 919/716-6767

September 15, 2003

Representative Jean Preston
603 Legislative Office Building
Raleigh, NC 27603-5925

Re: Advisory Opinion concerning ownership of dredged fill and accretions on Bogue Banks at Bogue Inlet; N.C. Gen. Stat. §§ 146-6.

Dear Representative Preston:

You ask several hypothetical questions relating to ownership of land that might be created by dredging fill and accretion on Bogue Banks at Bogue Inlet. The questions pose different actions the Town of Emerald Isle hypothetically might take in relation to its effort to move the navigational channel in Bogue Inlet from its current location directly next to Bogue Banks toward the middle of the inlet approximately 3000 linear feet west of Bogue Banks (Emerald Isle) and approximately 4,000 linear feet east of Bear Island. The Town proposes to block the old navigational channel and to stabilize the inlet shoreline at Emerald Isle.

The Town contemplates blocking off (damming up) the old channel with a large sand deposit of dredged material inland (i.e., North) of the area of the western tip of Bogue Banks adjacent to a large sand spit that has formed there. The Town wants to assure that beaches created by its dredging and nourishment project, including any beach that is expected to be formed along the existing channel's shoreline, will remain undeveloped public beaches vested in the State of North Carolina. In a conversation with the Town Manager after receiving your request, we ascertained that the Town's primary concern is an area of channel shoreline where a number of houses in the Town of Emerald Isle are threatened by the channel's eastward erosion. This area is inland of

the COLREGS Demarcation Line,¹ but well seaward (i.e., South) of the proposed dam. You ask specifically:

Question 1: If the Town's blocking off the old navigational channel in the manner described were to cause significant accretion along the old (existing) channel's shoreline on Bogue Banks at Emerald Isle, would the accretion be owned by:

- A. The current owner of the upland property pursuant to N.C. Gen. Stat. § 146-6(a) ; or
- B. The prior owner of property that has already completely eroded away prior to the dredging project;
- C. The State of North Carolina in trust for the public pursuant to N.C. Gen. Stat. § 146-6(f) ["land in or immediately along the Atlantic Ocean"] or N.C. Gen. Stat. § 146-6(a) ?

In our opinion, both our statutory and case law would make the current owner of the upland property the owner of the newly accreted land. Pursuant to N.C. Gen. Stat. § 146-6(a), "If any land is, by any process of nature. . . , raised above the high watermark of any navigable water, title thereto shall vest in the owner of that land which, immediately prior to the raising of the land in question, directly adjoined the navigable water." "'Accretion' denotes the act of depositing, by gradual process, of solid material in such a manner as to cause that to become dry land which was before covered with water." *State v. Johnston*, 278 N.C. 126, 146, 179 S.E.2d 371, 384 (1971). It is a "process of nature."

The State would not acquire any interest in the accreted land because N.C. Gen.

¹ The COLREGS Demarcation Line is a useful tool in determining where the Ocean shoreline ends and the channel, or inlet, shoreline begins. It is the same as the baseline of the State's territorial sea, which is determined according to the International Convention on the Territorial Sea and the Contiguous Zone. *United States v. California*, 381 U.S. 139 (1965). This line has been located at Bogue Inlet according to the International Regulations for Preventing Collisions at Sea, commonly known as "COLREGS," pursuant to 33 U.S.C. §§ 1601, et seq."

Stat § 146-6(f) is inapplicable to the hypothetical question posed for two reasons. First, subsection (f) does not apply to lands raised by accretion. Rather in our opinion, it applies only where the new land is raised above the mean high water mark by direct deposit by man of dredging fill or spoil on the shore.

Second, subsection (f) explicitly applies only to the title to land "in or immediately along the Atlantic Ocean." This hypothetical question, like those remaining, assumes that the deposition at issue is on the channel shoreline, as distinguished from the shore in or immediately along the Atlantic Ocean.

Finally, the title of the previous owner, whose property had been completely washed away by erosion, was extinguished; it is not he, but the current owner, who would own the newly accreted land. *Carolina Beach Fishing Pier, Inc. v. Town of Carolina Beach*, 277 N.C. 297, 177 S.E.2d 513 (1970).

Question 2: If the Town were to directly place a portion of the dredged material along the old (existing) channel shoreline (i.e., beside the threatened homes) in Emerald Isle, thereby creating a small strip of land along that shoreline above the mean high water mark, would that newly created shoreline vest in the State?

Once again the answer is no. N.C. Gen. Stat § 146-6(f) is inapplicable again because the channel shoreline about which the Town is concerned is not "immediately along the Atlantic Ocean." Instead, N.C. Gen. Stat. § 146-6(d) provides the answer. That section provides in pertinent part:

"[I]f in any process of dredging, by either the State or federal government, for the purpose of deepening any harbor or inland waterway, or clearing out or creating the same, a deposit of the excavated material is made upon the lands of any owner, and title to which at the time is not vested in either the State or federal government, or any other person, whether such excavation be deposited with or without the approval of the owner or owners of such lands, all such additions to lands shall accrue to the use and benefit of the owner or owners of the land or lands on which such deposit shall have been made, and such owner or owners shall be deemed vested in fee simple with title to the same."

Thus, title to the raised lands would vest in the adjacent upland owner in accordance with N.C. Gen. Stat. § 146-6(d). The fact the Town, rather than the State directly, finances and conducts the dredging and filling makes no difference. The Town is a political subdivision of the State and, in our opinion, the legislature did not intend that the State would have greater rights if the Town, rather than the State, financed the project. Any accretion to those raised lands would vest in the owner of the raised lands, not the State, per N.C. Gen. Stat § 146-6(a).

Representative Jean Preston
September 15, 2003
Page 4

Your third question contemplates that the title to the newly raised land in one or both of the first two questions would vest in the State. As neither of the methods described in Questions 1 or 2 would vest title in the State, this question is moot and we do not address it.

Question 4: Assuming that neither of the methods described in Questions 1 and 2 would vest title to the newly raised land in the State, can you identify any appropriate mechanism, either at the State or local level, that can be implemented to insure that no development of newly raised land at the channel shoreline of Bogue Inlet at Emerald Isle can occur?

The newly raised lands would be within the Inlet Hazard Area of Environmental Concern designated by the Coastal Resources Commission in 15A N.C. Admin. Code 7H.0304(3) under the authority of the Coastal Area Management Act, N.C. Gen. Stat. §§ 113A-100, *et seq.* ("CAMA"). Therefore, any development must be consistent with CAMA permitting requirements. Additional protections against development could be obtained by obtaining from the upland owners the dedication of a conservation easement to the Town, in exchange for the deposition of fill materials on their lots.

If the dredged spoil material were used to create an *island* in the old channel, that island would belong to the State. "If an island is, by any process of nature or by act of man, formed in any navigable water, title to such island shall vest in the State and the island shall become a part of the vacant and unappropriated lands of the State." N.C. Gen. Stat. 146-6(d). Were the island by accretion then to become connected to privately owned property along the inlet shoreline, the State would retain its interest in what had been the island. The boundary line would be located at the point where the State-owned island and the private uplands eventually join. *State v. Johnston*, 278 N.C. at 146-147, 179 S.E.2d at 384. This, of course, could be an expensive operation with an uncertain outcome, depending as it would on accretion.

Please note that this opinion does not address what permits or other approvals may be required for this project. We trust this Advisory Opinion is helpful to you and the Town.

Sincerely,

James C. Gulick
Senior Deputy Attorney General

Representative Jean Preston
September 15, 2003
Page 5

J. Allen Jernigan
Special Deputy Attorney General



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

October 15, 2003

Regulatory Division

Action ID No. 200100632

OCT 20 2003

4500.02

LK, EH

Mr. Ron Sechler
National Oceanic Atmospheric Administration Fisheries
101 Pivers Island Road
Beaufort, North Carolina 28516

Dear Mr. Sechler:

Please reference the Town of Emerald Isle's proposal to pursue Department of the Army authorization for the relocation of Bogue Inlet Channel between Emerald Isle and Hammocks Beach State Park (Bear Island) to protect residential homes and town infrastructures, and to place the dredged material on approximately 4.0 miles of beach for nourishment. Also, reference your August 8, 2003 letter concerning the revision of the Essential Fish Habitat (EFH) assessment.

Enclosed you will find a modified Essential Fish Habitat assessment as it pertains to your August commenting letter. In order to comply with the EFH regulations (50 CFR Section 600.920) and the Magnuson-Stevens Fishery Conservation and Management Act (Section 305[b][4][B]) and to satisfy Federal NEPA requirements, we are requesting that you review this document and provide any additional recommendations and comments within 30 days from the receipt of this letter.

Thank you for your attention to this matter. Should you have any questions, please contact Mr. Mickey Sugg at telephone (910) 251-4636.

Sincerely,

Keith A. Harris, Chief
Wilmington Regulatory Field Office

Enclosure

Copies furnished (w/o enclosure):

Mr. Ronald J. Mikulak, Chief
Wetlands Section- Region IV
U.S. Environmental Protection Agency
61 Forsyth Street, SW
Atlanta, Georgia 30303

Mr. Tom Jarrett
Coastal Planning & Engineering
204 Dorchester Place
Wilmington, North Carolina 28412

Mr. Doug Huggett
Division of Coastal Management
North Carolina Department of Environment
and Natural Resources
1638 Mail Service Center
Raleigh, North Carolina 27699-1638

✓ Mr. Craig Kruempel
Coastal Planning & Engineering
2481 N.W. Boca Raton Boulevard
Boca Raton, Florida 33431

Mr. David Rackley
National Marine Fisheries Service
219 Fort Johnson Road
Charleston, South Carolina 29412-9110

Mr. Andreas Mager, Jr.
National Marine Fisheries Service
9721 Executive Center Drive, North
St. Petersburg, Florida 33702-2439

Ms. Tere Barrett
Division of Coastal Management
North Carolina Department of
Environment and Natural Resources
151-B Hestron Plaza, NC Hwy 24
Morehead City, North Carolina 28557

Mayor Art Schools
Town of Emerald Isle
7500 Emerald Drive
Emerald Isle, North Carolina 28594-9320

Mr. Frank Rush
Town of Emerald Isle
7500 Emerald Drive
Emerald Isle, North Carolina 28594-9320

Town of Emerald Isle

Mayor
Arthur B. Schools, Jr.

Mayor Pro-Tem
Patricia McElraft

Board of Commissioners
Richard Eckhardt
Emily Farmer
Dorothy Marks
Floyd Messer



Town Manager
Frank A. Rush, Jr.
frush@emeraldisle-nc.org

Mailing Address
Town of Emerald Isle
7500 Emerald Drive
Emerald Isle, NC 28594

Voice 252-354-3424
Fax 252-354-5068

Visit our web site at www.emeraldisle-nc.org !

October 20, 2003

Mr. Larry D. Almond
1120 Baron Road
Waxhaw, NC 28173

RE: Special Meeting of Property Owners from The Point to Discuss Bogue Inlet Channel Relocation
Saturday, November 15, 2003, 10:00 am, Emerald Isle Town Hall

Dear Mr. Almond:

The Town of Emerald Isle is vigorously pursuing a project to relocate the main tidal channel in Bogue Inlet away from existing homes at The Point to a location approximately 3,000 ft. west of its current location. This new location would place the main tidal channel approximately halfway between Emerald Isle and Bear Island, and based on historical migration patterns, should provide at least 15 years of relief from erosion in The Point neighborhood.

The Town and its consultants, Coastal Planning & Engineering, are preparing to issue the formal Draft Environmental Impact Statement for public review in November. This marks the start of the formal Federal and State review processes, which we hope will culminate in the issuance of all necessary permits by August 2004. The Town intends to begin dredging the new inlet channel in November 2004 and complete all necessary work, including placement of the dredge spoils on 4 miles of oceanfront beach, by March 2005.

The Town has been working closely with a "Project Development Team", or "PDT", to prepare the Draft Environmental Impact Statement for over a year now. This process has allowed concerned parties to express concerns upfront and has allowed the Town to address these concerns on the "front end" of the project design rather than the "back end". Overall, we are pleased with this approach, and are hopeful it will result in a smoother formal review process over the next year. Two critical issues that have not yet been resolved are: 1) the ownership of any new land that accretes adjacent to the existing properties at The Point, and 2) the management of any new land that accretes in this area. The Town needs your input and cooperation to resolve these issues over the next two months so that appropriate plans can be included in the Final Environmental Impact Statement that is scheduled to be issued early next year.

As currently envisioned, the Bogue Inlet project will result in the creation of a new main tidal channel approximately 3,000 feet west of the current main channel. The project would involve the removal of approximately 1,000,000 cubic yards of sand from the new channel. Approximately 200,000 cubic yards of this material would be used to construct a dike across the existing channel in a location near the western terminus of the existing sand spit northwest of The Point neighborhood (map enclosed). The remaining 800,000 cubic yards would be used to nourish approximately 4.0 miles of oceanfront beach in western Emerald Isle. This dike is a key component of the overall project, and would

help to divert the majority of inlet flows through the new channel. Experts involved with the development of this project agree that the creation of the new channel and the construction of this dike should result in a natural filling of the existing main tidal channel, and that the western end of Emerald Isle (directly adjacent to The Point neighborhood) will re-form as a long sand spit feature similar to that which was present in the 1980s and early 1990s. The NC Attorney General's Office has issued an advisory opinion (attached) that any new sand that accretes in this area as a result of this project will be owned by the directly adjacent property owner. Depending on the exact location of your property and the current water line, this means that any new land that forms will most likely be owned by you and your neighbors.

The PDT, including the Federal and State permitting agencies, has expressed concern that there may be interest in developing this new land at some time in the future if this new land stabilizes over time. The PDT has also indicated that the new land will need to be effectively managed by the Town, State, or some other entity to preserve the new environmental habitat that forms in this area. A likely outcome of the permitting process is that there will need to be adequate legal assurances that: 1) any new land that accretes will never be developed, and 2) that the Town, State, or some other entity will manage this new habitat in an environmentally sound manner.

The Town has made it a priority to develop a cooperative relationship with the PDT members, and seeks to address these concerns in a cooperative and equitable manner. Because the property owners at The Point obviously have a significant stake in the outcome of this project, and will accrue ownership in any newly formed lands, the Town seeks your input and cooperation to address these concerns. You and any interested family members are invited to attend a special meeting with Town officials and consultants to address these matters on **Saturday, November 15, 2003 at 10:00 am at the Emerald Isle Town Hall**. I recognize that some owners may live a significant distance from Emerald Isle, but I urge you to consider making the trip to Emerald Isle for this meeting. The future of your properties adjacent to Bogue Inlet may depend on your input and cooperation on this matter.

Please call me at 252-354-3424 to discuss this matter if you are absolutely unable to attend this meeting. I will seek to gain your input via our telephone conversation to share with the other property owners who attend the meeting on November 15. As noted above, the Town would like to have a strategy for addressing these concerns within the next two months, and ideally sooner.

Please RSVP to me or Rhonda Ferebee, Town Clerk, at 252-354-3424 by Monday, November 10. I am also happy to answer any questions that you may have prior to the meeting, and you can call me at the same number during business hours at your convenience. The Town truly seeks your input and cooperation, and is fully committed to making this project a reality in November 2004. Please help us to make that happen.

Sincerely,

Frank A. Rush, Jr.
Town Manager

copy: Mayor Schools and Board of Commissioners
Derek Taylor, Town Attorney
Tom Jarrett, CPE
Mickey Sugg, US Army Corps of Engineers
Ted Tyndall, NC Division of Coastal Management
Greg Rudolph, Carteret County Shore Protection Office



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North Carolina Department of Cultural Resources
State Historic Preservation Office

David L. S. Brook, Administrator

Division of Historical Resources

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary
Office of Archives and History

October 27, 2003

Samuel K. Jolly, Chief
Wilmington Regulatory Division
Wilmington District Army Corps of Engineers
P.O. Box 1890
Wilmington, NC 28402-1890

Re: Relocation of Bogue Inlet between Emerald Isle and Bear Island, Carteret County,
ER02-11281

Dear Mr. Jolly:

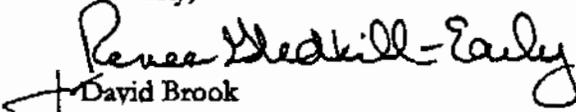
Thank you for your letter August 21, 2003, transmitting the archaeological survey report by Tidewater Atlantic Research, Inc. (TAR) for the above project.

During the course of the survey, no sites were located within the project area. TAR has recommended that no further archaeological investigation be conducted in connection with this project. We concur with this recommendation since the project will not involve significant archaeological resources.

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

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,



David Brook

cc: Gordon P. Watts, Jr., TAR

www.bpo.dcr.state.nc.us

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount St., Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-4763 • 733-8653
RESTORATION	515 N. Blount St., Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-6547 • 715-4801
SURVEY & PLANNING	515 N. Blount St., Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919) 733-6545 • 715-4801



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

Michael F. Easley, Governor

William G. Ross, Jr., Secretary

Dr. Philip K. McKnelly, Director

October 30, 2003

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

NOV 06 2003

E.H. CK 4500.02

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 the draft Environmental Impact Statement dated September 24, 2003.

Description of Bear Island

Section 4.1.2 Bear Island, contains a discussion of the natural resources of Hammocks Beach State Park. The discussion is brief and focuses mainly on location, dimensions, etc. I would suggest that additional information that describes the unique features of the Park be mentioned in the discussion. I have include some information that could be included in the re-write.

There are three sections to Hammocks Beach State Park totalling 1,137 acres. The largest section of Hammocks Beach State Park is Bear Island containing approximately 892 acres. 700 acres of Bear Island is a Registered Natural Heritage Area with the Natural Heritage Program. This Registry recognizes the fact that Bear Island is an undeveloped barrier island with the natural dynamics of the coastal forces shaping the island and its habitats. Bear Island contains a mosaic of the Dune Grass, Maritime Wet Grassland, Maritime Shrub, and Maritime Evergreen Forest natural communities.

The second largest section is Huggins Island containing approximately 210 acres (approximately 115 acres of this is uplands with Maritime Evergreen Forest - the remainder --95 acres-- is Maritime Swamp Forest and Tidial Marsh). The smallest section is the Mainland section containing about 35 acres. Also, both Bear Island, Huggins Island, and Dudley are Significant Natural Heritage Areas under the Natural Heritage Program's classification.

A number of rare plant and animal species are endemic to Bear 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,

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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.

One of the most important aspects of the Park is the unique educational opportunity it presents. Visitors are ferried to the island which affords an excellent opportunity for park staff to educate visitors on the marsh and island. In addition, the park recently completed a new visitors center with a focus on coastal ecology.

Shoreline Loss

The report discusses the impact of residual currents along the inlet shore causing potential erosion. Would this be true for the shoreline along Bear Island? If so, this potential loss should be discussed in the report. In addition, how long will this potential impact occur for.

Recreation

Section 5.12, Recreation Resources, have any estimates or modeling been developed that would determine if turbidity from the relocation project will impact swimming on Bear Island or any other recreational activities (swimming, fishing, etc.).

Navigation

Section 5.13, Navigation, I would like to know if Alternative F – Channel Relocation with Beach Nourishment, will result in any short term or long term impacts on Cow Channel. Will the project accelerate silting issues associated with the channel.

Mitigation

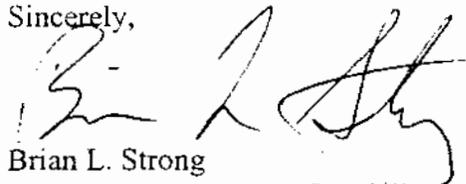
There is no discussion of mitigation in this document. Where will this discussion occur? DPR is still concerned about what will be done to mitigate any impacts to Bear Island that occur outside of the project scope. This remains DPRs #1 concern.

Impacts

What is the timeframe of the project. For example, when can we expect that impacts to Bear Island or other resources be judged to be outside of the Bogue Inlet project. In addition, how will it be determined that impacts from storms or other natural occurrences were not exacerbated by the Bogue Inlet project.

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,

A handwritten signature in black ink, appearing to read "Brian L. Strong". The signature is fluid and cursive, with the first name "Brian" and last name "Strong" clearly distinguishable.

Brian L. Strong
Resource Management Specialist

cc: Hammocks Beach State Park
Erin Haight, Coastal Planning & Engineering
Mr. Tom Jarrett, Coastal Planning & Engineering



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

October 30, 2003

Colonel Charles R. Alexander
District Engineer, Wilmington District
U. S. Army Corps of Engineers
P. O. Box 1890
Wilmington, NC 28402-1890

Attention: Mr. Mickey Sugg, Environmental Resources Section

Dear Colonel Alexander:

In accordance with your request for comments on the Preliminary Draft Environmental Impact Statement for the Bogue Inlet Channel Erosion Response Project, the U. S. Fish and Wildlife Service (Service) is pleased to respond. This letter contains early review comments on what is represented as a preliminary draft and does not constitute the final report of the Department of the Interior as required by Section 2(b) of the Fish and Wildlife Coordination Act (FWCA) (48 Stat. 401, as amended; 16 U.S.C. 661-667d), Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C 1531-1543) and the Migratory Bird Treaty Act (16 U.S.C 703-712), July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989. Comments on migratory shorebirds (the group that contains piping plover) will be complemented by more specific comments on the piping plover in response to the Biological Assessment.

1. In section 5.4.3 entitled Birds the Service requests the heading be changed to Migratory Shorebirds including the piping plover.
2. Under the No Action Alternative A the cumulative effect should be changed from negative to no effect.
3. Under Alternative B - Without Project - Relocate Homes the anticipated direct and indirect and cumulative impacts should be changed from negative to positive.
4. Under both Alternatives E (Channel Relocation without Beach Nourishment) and Alternative F (Channel Relocation with Beach Nourishment) impacts would be negative but could be changed to no effect, or even positive effect if all of the following measures are taken:
 - Observe nesting moratorium for piping plover from April 1 - July 30
 - The Town acquires the new land (fee title) after allowing the property owners enough

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land to rebuild their house if faced with a catastrophe, and establishes a bird sanctuary on all of the new town property soundward of the proposed beach ramp starting at the ramps edge and extending to within 30 feet of the inlet edge until reaching 100 feet from the point of the small cut where after it extends to the inlet edge. Vehicular access would be prohibited inland of the new access and seasonally restricted elsewhere.

- The Town commits to having this area posted as a bird sanctuary for perpetuity and to prohibit pedestrian and dog and cat access on the sanctuary. The Town commits to intensively patrol during the nesting season, provide public outreach and to monitor bird usage during breeding and non-breeding seasons and for a minimum of 3 years after the project.
- The Town establishes a fine via ordinance for persons walking within posted sanctuary or allowing dog or cats to run inside the sanctuary and agrees to enforce same (e.g. an extension of the leash law).
- If a research aspect is also accomplished that would provide useful information in regards to evaluation of similar projects in the future the impacts under Alternatives E and F would become positive.
- The Service suggests the Town work with the NC Wildlife Resources Commission (WRC) to accomplish these objectives. It is our understanding that agency is interested and could provide a cost bid for these services.

On another subject, more information is needed before an adequate assessment of potential impacts to submerged aquatic vegetation can be made.

The Service appreciates the opportunity to provide these comments. Please advise us of actions taken by the Wilmington Corps District or the Town in response to these comments. If you have questions regarding this letter, please contact Mike Wicker at 919-856-4520, ext. 22 or by e-mail at mike_wicker@fws.gov.

Sincerely,



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



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, Florida 33702

November 13, 2003

Colonel Charles R. Alexander, Jr.
District Engineer, Wilmington District
Department of the Army, Corps of Engineers
Regulatory Division
P. O. Box 1890
Wilmington, North Carolina 28402-1890

Attention: Mickey Sugg

Dear Colonel Alexander:

The National Marine Fisheries Service (NOAA Fisheries) has reviewed the modified Essential Fish Habitat Assessment (EFH) dated September 2003, for the Bogue Inlet Channel Relocation Project (Action ID No. 200100632) at Bogue Inlet in the Town of Emerald Isle, Carteret County, North Carolina. The modified EFH Assessment adequately describes the physical and biological conditions at Bogue Inlet; the Federally managed fishery resources that are at risk by the proposed action; and it incorporates our previous recommendations regarding the content of the assessment. However, NOAA Fisheries does not agree that the currently proposed mitigative measures are adequate to offset adverse impacts to EFH. In this regard, we note the following points concerning the adequacy in the EFH Assessment:

1. NOAA Fisheries has consistently advised that in-kind replacement of sub-tidal and intertidal EFH would be needed to offset expected losses and degradation of these aquatic resources. To address this, we have recommended that loss of approximately 25 of the 50 acres of these habitat types should be offset through in-kind habitat replacement. The EFH Assessment should be modified to address this need.
2. Tables 4.2 and 4.3 (A-F) are missing from the revised assessment. Consequently, it is unclear whether these tables are consistent with the current version of the assessment. To address this, the tables be updated and submitted for our review.
3. The assessment includes a commitment to use the 2003 digital aerial imagery to assess changes in habitat types associated with the project; however, based on coordination with the NOAA Beaufort Laboratory, this imagery is not adequate to allow mapping of submerged aquatic vegetation (SAV) in the project area. Because SAV is identified as a Habitat Area of Particular

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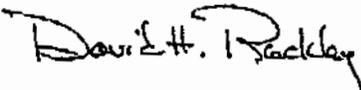


Concern, we previously requested that the applicant make an additional attempt to obtain satisfactory imagery prior to project authorization. In this regard, we agree that follow up imagery taken approximately 18 months after completion of the project would be acceptable for detecting changes in EFH.

4. Section 11.0 (Summary) includes mitigative measures to offset adverse effects to EFH. While we support inclusion of these measures in the project, the current plans would provide only 25 acres of intertidal and sub-tidal habitat to replace the loss of 50 acres of these habitats. NOAA Fisheries understands the dynamic nature of the inlet area and the applicant's desire to place up to 800,000 cubic yards of extra material on the ocean beach for renourishment; however, the stated purpose of the project is erosion control, not beach renourishment. Although providing restoration of an additional 25 acres of these habitats would reduce the volume of sand available for beach nourishment, adequate reduction in project related impacts to EFH is needed. As noted in Item 1 (above) NOAA Fisheries continues to recommend that 25 acres of up-front and in-kind replacement of EFH be provided.

Thank you for the opportunity to provide these comments. Related questions or comments should be directed to the attention of Mr. Ronald S. Sechler at our Beaufort Office, 101 Pivers Island Road, Beaufort, North Carolina 28516, or at (252) 728-5090.

Sincerely,


for Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

cc:
USFWS, Raleigh
EPA, Atlanta
SAFMC



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

Michael F. Easley, Governor

Donna D. Moffitt, Director

William G. Ross Jr., Secretary

MEMORANDUM

TO: Melba McGee, N.C. Division of Policy and Development
FROM: Guy Pearce, N.C. Division of Coastal Management *GPC*
SUBJECT: Review of SCH # 04-0151 Date: 12/17/03

A COPY OF ALL COMMENTS RECEIVED BY THE SCH IS REQUESTED REVIEWER COMMENTS ATTACHED

Review Comments:

This document is being reviewed for consistency with the N.C. Coastal Management Program pursuant to federal law and/or N.C. Executive Order 15. Agency comments received by SCH are needed to develop the State's consistency position.
• Project Review Number (if different from above) N/A
• A consistency position will be developed based upon our review on or before 1/25/04.

A Consistency Determination document _____ is, or _____ may be required for this project pursuant to federal law and/or N.C. Executive Order 15. Applicant should contact Guy Pearce or Doug Huggett in Raleigh at (919) 733-2293 for information on proper document format and applicable state guidelines and land use plan policies.

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

A Consistency Determination Document (pursuant to federal law and/or N.C. Executive Order 15) is not required.
_____ A consistency response has already been issued. Project Number _____ Date Issued _____
_____ Proposal involves < 20 acres and/or a structure < 60,000 sq. ft. and no AEC's or Land use Plan problems.
_____ Proposal is not in the Coastal Area and will have no significant impacts on any land or water use or natural resources of the Coastal Area.

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

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

Other (see attached).

State of North Carolina Consistency Position:

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

The proposal is inconsistent with the N.C. Coastal Management Program.

Other (see attached).

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