

FINDING OF NO SIGNIFICANT IMPACT  
TANGIER CHANNELS MAINTENANCE DREDGING

I have reviewed and evaluated the environmental assessment for this project as it relates to the overall public interest. The possible consequences of this proposal and various alternatives including the no action alternative were considered in terms of probable environmental impacts, economic factors, and social benefits.

Based on the information in this document, I have concluded that continued maintenance of the Federal Channels is vital to the economic and social welfare of the Tangier Community. The environmental impacts resulting from the project, including increased levels of turbidity and destruction of benthos, are expected to be minimal in extent and temporary in duration. In addition, the method of disposal along the western shoreline of the island will help to protect that region from future erosion. Because of the lack of either significant adverse impacts or opposition to the project, an environmental impact statement will not be required.

Date:

9 JUNE 1982



MICHAEL M. JENKS  
LTC, Corps of Engineers  
Acting District Engineer

11/11/82

DEPARTMENT OF THE ARMY

NORFOLK DISTRICT  
U. S. ARMY CORPS OF ENGINEERS

ENVIRONMENTAL ASSESSMENT

TANGIER CHANNELS  
ACCOMACK COUNTY, VIRGINIA

APRIL 1982

1.00 Project Location: Tangier Island is part of Accomack County, Virginia and is located in the Chesapeake Bay just south of the Virginia-Maryland boundary. It is separated from the Eastern Shore of Virginia and Maryland by Tangier Sound, a part of the Chesapeake Bay.

1.01 Existing Project Description: The Tangier Channels Federal Project consists of two separate channels under different Congressional authorizations. Tangier Channel to Tangier Sound was authorized by the River and Harbor Act of 2 March 1919 and consists of a 1300-foot long, 8-foot deep channel 100 feet wide in Tangier Sound, then reducing to 60 feet in width for a distance of 4800 feet. In addition, the project includes a turning basin 400 feet square and 7 feet deep. The Tangier Channel to Chesapeake Bay was approved in 1964 under the River and Harbor Act of 1960 and consists of a channel 7 feet deep and 60 feet wide with a total length of 3800 feet. See Figure 1. Advance maintenance of 1-foot plus 1-foot allowable overdepth will produce a total maximum depth of 10 feet in Tangier Channel to Tangier Sound and 9 feet in Tangier Channel to Chesapeake Bay.

Periodic maintenance is necessary to keep the channels open. Quantities removed over the past 20 years are given in the following table. The material averages 40,000 cubic yards annually and is removed every two to three years. Over the next 50 years, it is estimated that 2 million cubic yards will need to be removed.

<u>DATE OF DREDGING</u>	<u>TOTAL CUBIC YARDS REMOVED</u>
May-June 1980	71,900
April 1979	1,400
Feb.-Mar., April 1977	146,800
May-June 1974	122,800
July-August 1972	106,100
August 1969	104,200
Dec. 65-June 1966	99,900
October 1963	77,200
January 1960	49,000

In the past, dredged material has been placed on fifteen separate areas within the Tangier system. These are shown on Figure 2. An engineering consultant has undertaken an extensive study of the long-term disposal options for Tangier. The consultant recommends disposal along the western shore of the island to stabilize the shoreline and provide a buffer to the adjacent marsh. This method of disposal has been approved by the environmental agencies and will be used as the means of long-term disposal for the project. Although the designated disposal area includes the overboard region adjacent to essentially the entire western shoreline, only portions will be used during each dredging cycle. The material will be placed initially along the most severely eroded areas. Subsequently, the placement will depend on the prevailing winds and resulting sediment transport to ensure that no material re-enters the channels.

Recent borings in the channels have shown the material to be mostly sand with very little silt. Likewise, the sediments in the disposal area are

fine to medium sand with some near shore organic materials, which are continually breaking loose from the eroding marsh.

1.02 Continued Need: The maintenance of the Tangier Channels is essential for the economy of the island and for transport of vital supplies to the 759 residents (1980 Census). Essentially every resident of Tangier is dependent on the seafood business for his livelihood. Seafood grounds near the island produce an abundance of oysters, clams, and crabs that are processed on the island and sold to outside buyers. The channels and turning basin provide access to the fishing areas and allow the processed seafood to be shipped to markets on the mainland.

Most importantly, a majority of the food, fuel, medical, and manufactured supplies are delivered to the island by boat. The daily boat from Crisfield, Maryland brings mail, while other boats from Reedville, Virginia and Crisfield bring supplies and tourists. The fuel barge, which delivers heating oil to the island every three weeks, requires an 8-foot draft when fully loaded. If the channel is shoaled, the barge can only enter the harbor partially loaded, and then only on high tide. On several occasions in recent years, the island's oil supplies reached critical levels when the fuel barge was unable to get through the channel. Emergency supplies had to be flown in by air. The small airport on the island is normally limited for delivery of supplies because of its size.

2.00 Environmental Setting With Existing Project: Most of Tangier Island is low marshland, with the remainder being sand. The shoreline is characterized by salt marshes interspersed with occasional sandy beaches. The western shoreline, exposed to wind and wave action, has been eroding at a rate of 20 feet per year.

Only about a 1/2-square mile area of the island is habitable. It is composed of separate sand ridges that vary in length from a few hundred yards to a mile, and in width from 200 feet to 200 yards. The three inhabited ridges are known as Main Ridge, West Ridge, and Canton Ridge. They are geographically separated by marsh and connected by narrow wooden bridges. Generally, elevations on the island are less than 6 feet above mean low water.

The character of the island is quite distinctive. Because of its isolation through the years, Tangier has retained much of the quaint appearance and dialect of colonial days. The many tourists who visit the island each year are attracted to its many unusual features.

3.00 Environmental Impact of Continued Maintenance: The project maintenance will create some temporary environmental disturbances in the channels and disposal area as described in the following paragraphs.

3.01 Fish and Wildlife: The channel dredging will involve disturbance of bottom sediments and destruction of non-mobile benthic species, especially epifauna which can not avoid the cutterhead. Since the benthic community has been periodically disturbed by maintenance dredging operations since 1934, the biological diversity of the area is considered low. Repopulation of impacted groups should begin soon after dredging ceases and should reach its potential within two years,

depending on available nutrients and new depths within the project channels. Pelagic species represented by various finfish, blue crabs (Callinectes sapidus), and algae will return to the water column during or soon after settlement of the suspended particulate matter. Because of the importance of the soft-shell crab industry to the island, the utmost effort will be made to avoid dredging during the shedding season.

The dredged material will be placed along the western shoreline of Tangier, immediately offshore from an existing marsh. The dominant vegetation is saltmarsh cordgrass (Spartina alterniflora) and supports a diverse community ranging from protozoans to fiddler crabs (Uca spp.), which feed directly on the detrital material. A complete list of benthic organisms common to the shoreline of Tangier was prepared by the Virginia Institute of Marine Science (1975) in a report to the Virginia Airports Authority. See Appendix I, Table 1.

Disposal along the shoreline will cover most organisms living within the intertidal zone; however, it is anticipated that repopulation will occur within two years, forming a community similar to the existing ecosystem. Numerous foragers such as Atlantic silversides (Menidia menidia), mummichog (Fundulus heteroclitus), striped killfish (Fundulus majalis), and white mullet (Mugil curema) feed within the area. In addition, commercially important Atlantic menhaden (Brevoortia tyrannus) and also the bay anchovy (Anchoa mitchilli) depend on the highly productive mud flats for some phase of their life history. See Appendix I, Table 2 for a list of commercially important fish common to the vicinity of Tangier.

Both foraging and predatory finfish should not be affected to any great extent by the disposal since their mobility will enable them to avoid turbid waters. The disturbed ecosystem within the photic zone should recover within two years following disposal operations.

The marshes surrounding Tangier support both resident and transient species of waterfowl. Resident species include clapper rail (Rallus longirostis), seaside sparrow (Ammodramus maritima), and snowy egret (Leucophoyx thula). Migratory species frequenting Tangier during the winter months include coot (Fulica americana), black duck (Anas rubripes), common scoter (Oidemia nigra), brant (Branta bernicla), mallard, (Anas platyrhynchos), herring gull (Larus argentatus), and laughing gull (Larus atricilla). The project should not adversely impact waterfowl.

A review of maps and records from the Virginia Marine Resources Commission indicates that there are no leased oyster grounds adjacent to either the Federal channels or the disposal area.

3.02 Shoreline Erosion and Accretion: The west shore along and just south of the airport runway has been eroding at a rate of nearly 20 feet per year. This severe scour is caused by high energy wave action freeing large clumps of exposed marsh and washing away the underlying sand stratum. It presents a very real threat to the survival of the marsh and surrounding land areas. The airport runway is in certain jeopardy,

with its southern terminus now within feet of the bay. Also, a recently approved sewage treatment plant to be located west of the runway could receive some flooding or encroachment from the lapping waves. The material that is being eroded is transported down drift to the southernmost spit region of the island and provides a continuous source of sand for this recreational beach area.

The planned disposal along the western shoreline will serve to mitigate or arrest further erosion by providing a protecting buffer. The disposal material, instead of the existing coastal soils, will be transported south to provide sand for the southern spit. Periodic disposal during dredging cycles should provide sufficient material to the shoreline for its future protection. The engineering report prepared for this project (see References) provides a detailed analysis of the coastal processes affecting the west shore of Tangier. This report is available upon request from the Norfolk District Dredging Management Branch.

3.03 Endangered or Threatened Species: There are no known endangered or threatened species that would be affected by the project.

3.04 Water Quality: The dredging will result in some short-term turbidity increases in the channel and in the disposal area. This effect should be minimal, however, due to the high percentage of sand in the material. The growth of algae may be temporarily inhibited due to the decreased level of sunlight penetration. Alteration of water quality has not been considered significant in the past with the use of a cutterhead dredge and is expected to be minimal this time as well.

3.05 Air Quality: Air pollution from the dredging, including small amounts of vehicular and particulate emissions, will not be of concern due to the limited scope and location of the project.

3.06 Vegetation: The shoreline landward of the disposal area is characterized by wide stands of saltmarsh cordgrass (Spartina alterniflora), saltmeadow hay (Spartina patens) and saltgrass (Distichlis spicata). Disposal of dredged material bayward of this marsh may serve as a damper on wave energy to the extent that the high erosion rate may be abated. The project will not otherwise significantly impact the existing wetland vegetation.

3.07 Historical and Cultural Values: A search in the most recent National Register of Historic Places and communication with the Virginia Historic Landmarks Commission have revealed no structures or areas of historical significance. In addition, the Virginia Research Center for Archeology has been contacted about the project.

3.08 Recreation: The project will have a positive impact on the recreation potential of the southern spit area of the island. Because of predominant winds and waves, the disposal material will tend to nourish the existing beaches, which are enjoyed by the islanders in the summer months. Organized recreational events as well as other activities are frequently held on the beaches and surrounding areas.

3.09 Adverse Environmental Effects Which Can Not Be Avoided Should The Project Be Implemented: The channel dredging will result in the destruction of benthos in the channels and disposal area. The more mobile forms of the biota, however, will be able to avoid the dredging operation. Temporary increases in turbidity should not have any appreciable or long-term effects on biotic species.

4.00 Alternatives to Proposed Action: The following alternatives were investigated for long-term disposal.

4.01 Disposal Within Interior of Island: The engineering report concludes that upland disposal areas on the island are insufficient for long-term use, and their expansion would require significant destruction of surrounding wetlands. Disposal between the East and West Ridges would create additional upland areas. However, it would also involve the filling of needed drainage areas and would create social and legal problems because of multiple ownership of the property.

4.02 Disposal in Deep Trough East of Tangier: From an engineering standpoint, this option is feasible and would be relatively easy to accomplish. However, it would preclude any beneficial use of the dredged material, which would be completely lost to the Tangier system.

4.03 Disposal on Port Isabella Island: This area has been used previously for disposal of dredged material. Long-term disposal at this site would require further levee construction and would involve horizontal expansion onto surrounding marshland.

4.04 No Action: This alternative is not considered viable because of the complete dependency of the Tangier residents on the channels for delivery of necessary food, fuel, and supplies. Without maintenance, the channels would shoal to controlling depths of 4 feet or less.

5.00 List of Agencies, Interested Groups, and Public Consulted: This project has been thoroughly coordinated during bi-monthly meetings with all concerned Federal and state environmental agencies. This assessment will be coordinated with the following agencies:

National Marine Fisheries Service  
U.S. Coast Guard  
U.S. Environmental Protection Agency  
U.S. Fish and Wildlife Service  
Governor's Council on Environment  
Virginia Historic Landmarks Commission  
Virginia Institute of Marine Science  
Virginia Marine Resources Commission  
Virginia State Water Control Board  
Accomack County

6.00 Conclusions and Recommendations: The dredging of Tangier Channels will not have a significant adverse environmental impact on the ecosystems within Tangier Sound or the Chesapeake Bay. Disposal along the western shoreline of the island will help to abate the severe erosion that threatens the entire island.



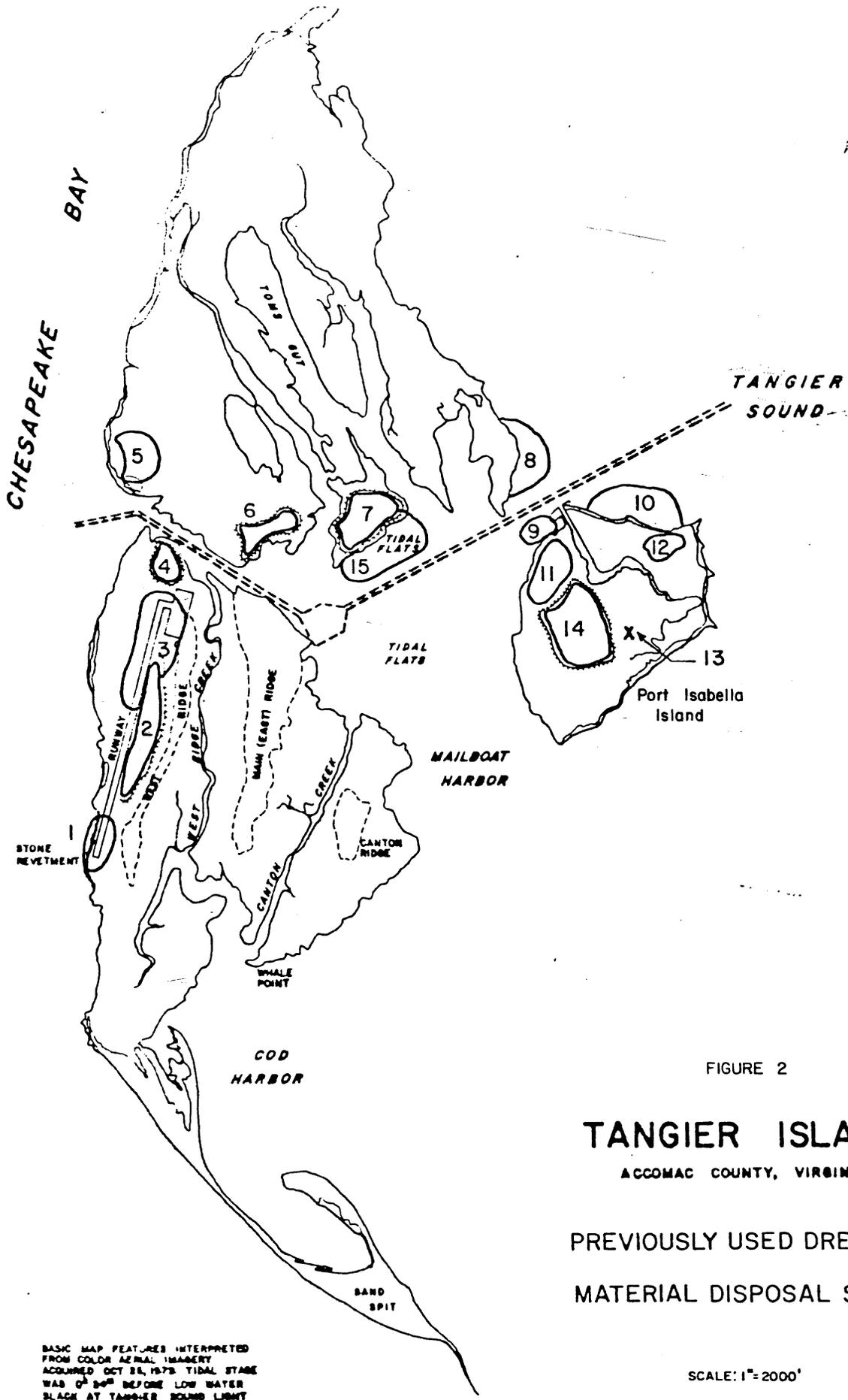


FIGURE 2

# TANGIER ISLAND

ACCOMAC COUNTY, VIRGINIA

PREVIOUSLY USED DREDGED  
MATERIAL DISPOSAL SITES

SCALE: 1" = 2000'

BASIC MAP FEATURES INTERPRETED FROM COLOR AERIAL PHOTOGRAPHY ACQUIRED OCT 25, 1979. TIDAL STAGE WAS 0' 20" BEFORE LOW WATER BLACK AT TANGIER SOUND LIGHT ONE WHOLE DE OF SAND SPIT

## REFERENCES

1. Holton, J. Woodville, Jr., and Cyril Galvin. Evaluation of Long-Term Dredged Material Disposal, Tangier Island, Virginia. Prepared for Dredging Management Branch, Norfolk District Corps of Engineers, March, 1982.
2. Orth, Robert J. and Donald F. Boesch. Reconnaissance Survey of Benthic Communities of a Potential Borrow Site off Tangier Island, Virginia. Report to Virginia Airports Authority from Virginia Institute of Marine Science, Gloucester Point, Virginia, July, 1975.
3. Virginia Institute of Marine Science. Comments of Virginia Institute of Marine Science on the Disposal of Spoil from Tangier Island Channel Dredging. December 9, 1976.

APPENDIX I

APPENDIX I

Table 1. Summary table for all species identified from triplicate grab samples taken at 13 station sites off Tangier Island. For each station the total number of each species for the three 0.1 m<sup>2</sup> grabs, total number of species, total number of individuals, species diversity, evenness and richness are given.

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
<b>PLATYHELMINTHES</b>														
<u>Stylochus ellipticus</u>											1			1
<b>RHYNCHOCOELA</b>														
Nemertean Unid.	4	8	4	5	5	5	3	7	3	3	6	5	8	66
<b>OLIGOCHAETA</b>														
<u>Pelosclex gabriellae</u>	2	161	2	40	22	45	1	23	12	24	21	18	6	377
<b>POLYCHAETA</b>														
<u>Asabellides oculata</u>		1												1
<u>Drilonereis longa</u>								1						1
<u>Eteone heteropoda</u>	1	6	1	3	1		2	4		1	1			20
<u>Eteone lactea</u>		2			2		2	3	2				3	14
<u>Exogone dispar</u>						1						1		2
<u>Glycera dibranchiata</u>		5	2	1	1	1	1	1	1	2	1	3	2	21
<u>Glycine solitaria</u>		1		1										2
<u>Gyptis vittata</u>				1	1	2						1		5
<u>Heteromastus filiformis</u>	7	35		4				2						48
<u>Nereis succinea</u>	1	2		2			1	1			1	1		9
<u>Ophelia bicornis</u>	1	5	474	263	280	238	31	268	515	516	257	308	426	3582
<u>Parahesion luteola</u>			1											1
<u>Paraonis fulgens</u>	15	25	21	3	22	5	170	15	41	10	18	6	26	377
<u>Polydora ligni</u>	4	14		5		2				1	2	2		30
<u>Pseudeurythoe paucibranchiata</u>										1		1		2
<u>Sabellaria vulgaris</u>				1										1

Reference: Orth, Robert J. and Donald F. Boesch. Reconnaissance Survey of Benthic Communities of a Potential Burrow Site off Tangier Island, Virginia. Report to Virginia Airports Authority from Virginia Institute of Marine Science, Gloucester Point, Virginia, July 1975.

Table 1 (Continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
<b>POLYCHAETA (cont.)</b>														
<u>Scolecoides viridis</u>	58	53	38	40	42	76	74	31	48	42	49	80	65	696
<u>Scolecoides squamata</u>		6				9						2	1	18
<u>Scoloplos robustus</u>	61	62	30	57	93	39	107	110	60	80	55	31	48	833
<u>Scoloplos rubra</u>		1		2	1	11		1			1	3		20
<u>Spiochaetopterus oculatus</u>											1			1
<u>Spiophanes bombyx</u>		3		1		9							5	20
<u>Streblospio benedicti</u>	1	6						1				2		9
<u>Syllidae</u>	2	6				1	1	10	2	4	2	1		30
<u>Tharyx setigera</u>				1							2	2		1
<b>GASTROPODA</b>														
<u>Acteocina canaliculata</u>		34	5	11	11	49		8	6	16	28	32	4	204
<u>Doridella obscura</u>										1			1	2
<b>BIVALVIA</b>														
<u>Gemma gemma</u>	81	1352	148	475	308	878	293	303	429	255	479	445	401	5847
<u>Lyonsia hyalina</u>		1	1		4	14			1	3	4	13		41
<u>Macoma balthica</u>	5	3	1	3		4		1		1	2	4		24
<u>Macoma mitchelli</u>							1							1
<u>Mulinia lateralis</u>		4	1	4	6	83		1		8	16	48	2	173
<u>Mya arenaria</u>	5	9	3	10	4	15	1	2	2	1	6	8	3	69
<u>Petricola pholadiformis</u>		9	2	1			1		2	2		1	1	19
<u>Tagelus sp.</u>		1						1						2
<u>Tellina agilis</u>	2	1					1	1		1				6
<b>CIRRIPEDIA</b>														
<u>Balanus improvisus</u>	5			2						1				8
<b>MYSIDACEA</b>														
<u>Neomysis americana</u>		1	2	3	4	6		13	5	4	4			42

Table 1 (Continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
<b>CUMACEA</b>														
<u>Cyclaspis varians</u>			4	1		2	1	6	5	8	8	1	7	43
<u>Oxyurostylis smithii</u>				2	5							3		10
<b>OSTRACODA</b>														
Cytheridae				1			1							2
<b>ISOPODA</b>														
<u>Chirodotea caeca</u>	1	4	23	2	33	17	26	10	11	15	46	21	40	249
<u>Cyathura burbancki</u>						6					1	7		14
<u>Cyathura polita</u>	1	2												3
<u>Edotea triloba</u>	1	1		5				1						8
<u>Sphaeroma quadridentatum</u>	1		19	2	23	4	3	6	7	2	9	6	3	85
<b>AMPHIPODA</b>														
<u>Acanthohaustorius millsii</u>		5		8	1		247		1	1			6	269
<u>Corophium sp.</u>				1	4				1	2	2			10
<u>Gammarus mucronatus</u>	1				1	3				2	2	15	1	25
<u>Monoculodes edwardsi</u>	81	116	148	164	184	125	200	250	228	239	167	225	112	2233
<u>Paracaprella tenuis</u>				1										1
<u>Stenothoe sp.</u>			1		3					1	1			6
<b>DECAPODA</b>														
<u>Crangon septemspinosa</u>	1	3			2			1		2	1			10
<b>INSECTA</b>														
<u>Clunio sp.</u>												1		1
<b>PHORONIDA</b>														
<u>Phoronis psammophila</u>	1	1		4	11	3		1	2	4	10	50	2	89

Table 1 (Continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
ECHINODERMATA														
<u>Leptosynapta tenuis</u>		4	1	3	3	13		2	2	3	6	5	4	46
PISCES														
<u>Paralichthys dentatus</u>					1									1
Total Number of Species	25	37	23	37	29	29	22	31	23	33	32	34	24	60
Total Number of Individuals	343	1953	932	1133	1078	1666	1168	1085	1380	1256	1208	1352	1177	15731
Diversity (H')	2.98	1.99	2.34	2.65	2.96	2.61	2.80	2.78	2.37	2.59	2.84	3.01	2.49	2.94
Evenness (J')	0.64	0.38	0.51	0.50	0.60	0.53	0.62	0.56	0.52	0.51	0.56	0.59	0.54	0.49
Species Richness (S-1/lnN)	4.11	4.75	3.22	5.12	4.01	3.77	2.97	4.29	3.04	4.48	4.37	4.58	3.25	6.11

76°01'

76°00'

37°50'

Fig. 3  
LOCATION OF BOTTOM SAMPLES  
WEST SIDE OF TANGIER ISLAND

• - Station Site



Shoreline from NOS chart 568, 10th ed., 1970  
soundings in feet below mean low water  
(NOS datum)

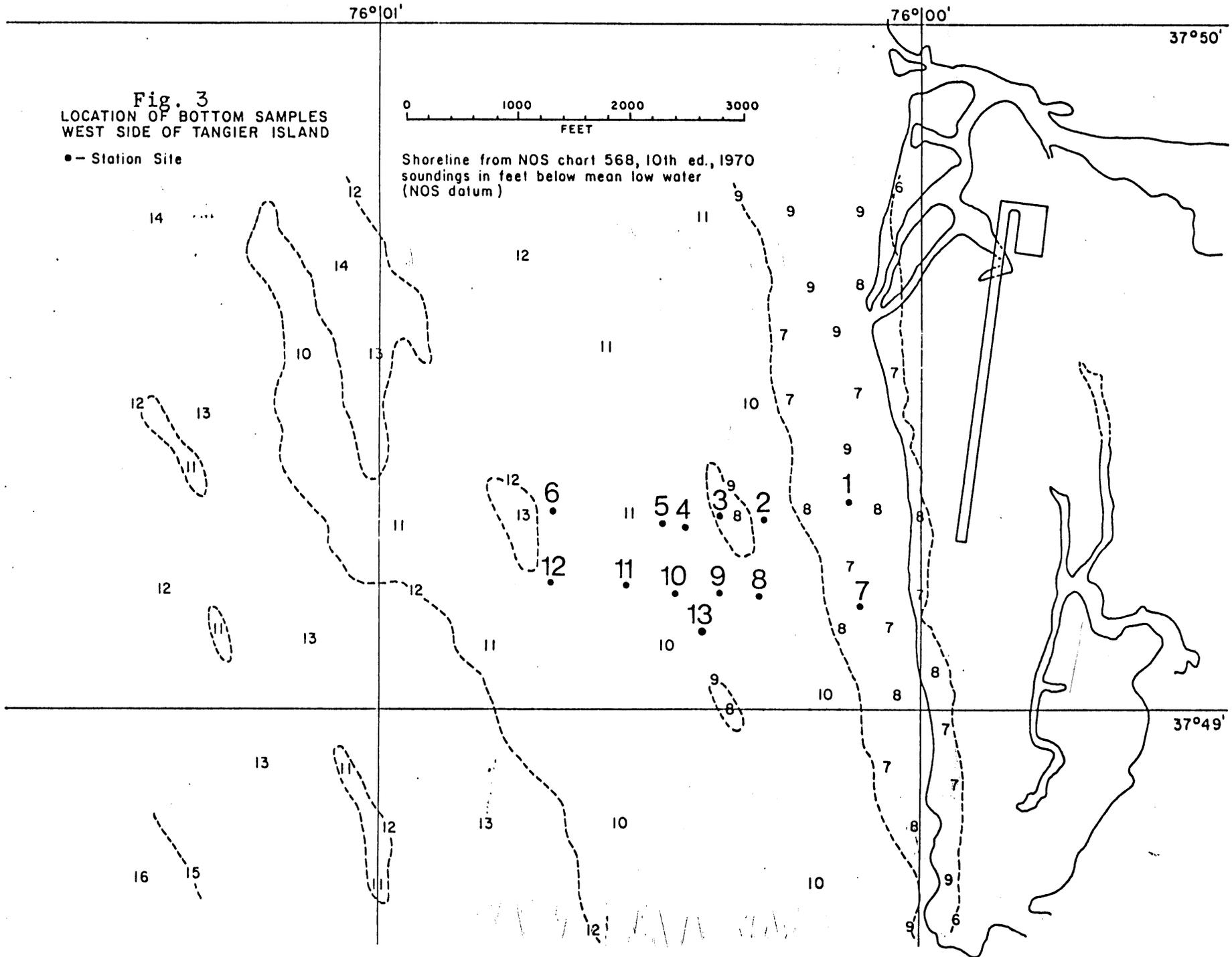


TABLE 2. COMMERCIALLY IMPORTANT FISH COMMON  
TO VICINITY OF TANGIER ISLAND

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>
Croaker	<u>Micropogon undulatus</u>
Spot	<u>Leiostomus xanthurus</u>
Bluefish	<u>Pomatomus saltatrix</u>
Rockfish (striped bass)	<u>Morone saxatilis</u>
Speckled trout	<u>Cynoscion nebulosus</u>
Grey trout	<u>Cynoscion regalis</u>
Alewives	<u>Alosa pseudoharengus</u>
Menhaden	<u>Brevoortia tyrannus</u>
American shad	<u>Alosa sapidissima</u>

11/11/61

APPENDIX II

APPENDIX II

Preliminary Evaluation of 404(b)(1) Guidelines  
Contained in Vol. 45 No. 249 of the Federal Register  
dated 24 December 1980

PROJECT: Tangier Channels, overboard disposal used for beach nourishment/  
erosion protection.

1. Review of Compliance (230.10(a)-(d) (Subpart B)

A review of the permit application indicates that:

a. The discharge represents the least environmentally damaging practicable alternative and if in a special aquatic site, the activity associated with the discharge must have direct access or proximity to, or be located in the aquatic ecosystem to fulfill its basic purpose (if no, see section 2 and information gathered for EA alternative);

YES X NO     

b. The activity does not appear to 1) violate applicable State water quality standards or effluent standards prohibited under Section 307 of the CWA; 2) jeopardize the existence of Federally designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies);

YES X NO     

c. The activity will not cause or contribute to significant degradation of waters of the U. S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values (if no, see section 2)

YES X NO     

d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (if no, see section 5)

YES X NO

2. Technical Evaluation Factors

	N/A	Not Significant	Significant *
a. Physical and Chemical Characteristics of the Aquatic Ecosystem (230.20-230.25) (Subpart C)		X	
1) Substrate impacts			
2) Suspended particulates/turbidity impacts		X	
3) Water Quality Control		X	
4) Alteration of current patterns and water circulation		X	
5) Alteration of normal water fluctuations/hydroperiod	X		
6) Alteration of salinity gradients	X		
b. Biological Characteristics of the Aquatic Ecosystem (230.30-230.32) (Subpart D).			
1) Effect on threatened/endangered species and their habitat	X		
2) Effect on the aquatic food web		X	
3) Effect on other wildlife (mammals, birds, reptiles, and amphibians)		X	
c. Special Aquatic Site (230.40-230.45) (Subpart E)			
1) Sanctuaries and refuges	X		
2) Wetlands		X	
3) Mud flats		X	
4) Vegetated shallows		X	
5) Coral reefs	X		
6) Riffle and pool complexes	X		
d. Human Use Characteristics (230.50-230.54) (Subpart F)			
1) Effects on municipal and private water supplies	X		
2) Recreational and Commerical fisheries impacts		X	
3) Effects on water-related recreation		X	
4) Aesthetic impacts		X	
5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves	X		

3. Evaluation of Dredged or Fill Material (230.60) (Subpart G)

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material (Check only those appropriate.)

- |   |               |
|---|---------------|
| 1) Physical characteristics. . . . .  | <u>X</u>      |
| 2) Hydrography in relation to known or anticipated sources of contaminants . . . . .  | <u>X</u>      |
| 3) Results from previous testing of the material in the vicinity of the project. . . . .  | <u>X</u>      |
| 4) Known, significant, sources of persistent pesticides from land runoff or percolation. . . . .  | <u>X</u>      |
| 5) Spill records for petroleum products or designated (Section 311 of CWA) hazardous substances. . . . .  | <u>X</u>      |
| 6) Other public records of significant introduction of contaminants from industries, municipalities or other sources. . . . .   | <u>X</u>      |
| 7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities. . . . . | <u>X</u>      |
| 8) Other sources (specify) . . . . .  | <u>      </u> |

List appropriate references and a brief of supportive evidence.

Because of the remote location of the project and its distance from industrialized areas, the presence of significant chemical contaminants is unlikely.

b. An evaluation of the appropriate information in 3a above indicated that there is reason to believe the proposed dredge or fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and disposal sites and not likely to constraints. The material meets the testing exclusion criteria.

YES X NO

4. Disposal Site Delineation (Section 230.11(f))

a. The following factors as appropriate, have been considered in evaluating the disposal site.

- |   |               |
|---|---------------|
| 1) Depth of water at disposal site . . . . .  | <u>X</u>      |
| 2) Current velocity, direction, and variability<br>at disposal site. . . . .  | <u>X</u>      |
| 3) Degree of turbulence. . . . .  | <u>X</u>      |
| 4) Water volume stratification . . . . .  | <u>X</u>      |
| 5) Discharge vessel speed and direction. . . . .  | <u>X</u>      |
| 6) Rate of discharge . . . . .  | <u>X</u>      |
| 7) Dredged material characteristics (constituents,<br>amount, and type of material, settling<br>velocities) . . . . . | <u>X</u>      |
| 8) Number of discharges per unit of time . . . . .  | <u>X</u>      |
| 9) Other factors affecting rates and patterns of<br>mixing (specify). . . . .   | <u>      </u> |

List appropriate references.

Evaluation of Long-Term Dredged Material Disposal, Tangier Island, Virginia by J. Woodville Holton and Cyril Galvin.

b. An evaluation of the appropriate factors in 4a above indicates that the disposal site and/or size of mixing zone are acceptable

YES X NO       

5. Actions to Minimize Adverse Effects (Section 230.70-230.77) (Subpart H)

All appropriate and practicable steps have been taken, through application of recommendation of Section 230.70-230.77 to ensure minimal adverse effects of the proposed discharge. List actions taken.

YES X NO

6. Factual Determination (Section 230.11)

A review of appropriate information as identified in items 2-5 above indicates that there is minimal potential for short or long-term environmental effects of the proposed discharge as related to:

a. Physical substrate at the disposal site (review sections 2a, 3, 4, and 5 above)	YES	<u>X</u>	NO	<u>    </u>
b. Water circulation, fluctuation and salinity (review sections 2a, 3, 4, and 5)	YES	<u>X</u>	NO	<u>    </u>
c. Suspended particulates/turbidity (review sections 2a, 3, 4, and 5)	YES	<u>X</u>	NO	<u>    </u>
d. Contaminant availability (review sections 2a, 3, and 4)	YES	<u>X</u>	NO	<u>    </u>
e. Aquatic ecosystem structure and function (review sections 2b and c, 3, and 5)	YES	<u>X</u>	NO	<u>    </u>
f. Disposal site (review sections 2, 4, and 5)	YES	<u>X</u>	NO	<u>    </u>
g. Cumulative impact on the aquatic ecosystem	YES	<u>X</u>	NO	<u>    </u>
h. Secondary impacts on the aquatic ecosystem	YES	<u>X</u>	NO	<u>    </u>

7. Findings

- a. The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) guidelines. . . . . X
- b. The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) guidelines with the inclusion of the following conditions: . . . . .
- c. The proposed disposal site for discharge or dredged or fill material does not comply with the Section 404(b)(1) guidelines for the following reason(s):



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION III

6TH AND WALNUT STREETS  
PHILADELPHIA, PENNSYLVANIA 19106

APR 30 1982

Mr. Jack G. Starr  
Chief, Engineering Division  
Norfolk District  
Corps of Engineers  
Fort Norfolk  
803 Front Street  
Norfolk, VA 23510

Re: Environmental Assessment for Tangier Channels

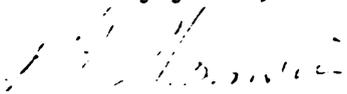
Dear Mr. Starr:

The Environmental Protection Agency has reviewed the proposed project to continue maintenance of two channels at Tangier Island. The resulting spoils are to be used for beach nourishment and erosion protection. After consideration of the environmental impacts, and alternatives to the project, we have no objections to the District's assessment. However, we do recommend the following conditions be applied to the project.

1. No spoils are to be placed in wetlands.
2. Spoils should not be mounded higher than MHW +1 foot.
3. Stabilization techniques such as seeding with erosion resistant vegetation should be reviewed.
4. During the dredging cycle there shall be no discharge of oils and grease into navigable waters.

Thank you for the opportunity to comment on this assessment. Please keep us informed as this project proceeds.

Sincerely yours,

  
S. F. Thoumsin  
Acting Chief  
EIS & Wetlands Review Section



DEPARTMENT OF THE ARMY  
NORFOLK DISTRICT, CORPS OF ENGINEERS  
FORT NORFOLK, 803 FRONT STREET  
NORFOLK, VIRGINIA 23510

REPLY TO  
ATTENTION OF:

NAOEN-W

6 May 1982

Mr. S. F. Thoumsin  
Acting Chief  
EIS & Wetlands Review Section  
U. S. Environmental Protection Agency  
6th and Walnut Streets  
Philadelphia, Pennsylvania 19106

Dear Mr. Thoumsin:

This is to acknowledge receipt of your 30 April 1982 letter indicating no objections to the Environmental Assessment for Tangier Channels. In reference to the standard conditions specified in your letter, the Corps will make every effort to assure that they are met.

Condition number 3 of your letter concerned shoreline stabilization by seeding with erosion resistant vegetation. Although many disposal operations are conducive to such measures, it is felt that seeding would not be practical in this case. The engineering investigations concluded that the dynamic nature of the intertidal zone along the west shore of the island will prevent any substantial accumulation of dredged material. Also, your condition number 2 restricts the mounding of material to no higher than +1 foot MHW. These factors will essentially eliminate the possibility of seeding any vegetation on the dredged material. However, your agency will be kept informed of the conditions as the project progresses.

Your expeditious review and response to this project are greatly appreciated.

Sincerely,

  
for JACK G. STARR  
Chief, Engineering Division



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Services Division  
Habitat Protection Branch  
7 Pleasant Street  
Gloucester, Massachusetts 01930-3799

MAY 4 1982

Mr. Jack G. Starr  
Chief, Engineering Division  
Department of the Army  
Corps of Engineers  
Fort Norfolk, 803 Front Street  
Norfolk, Virginia 23510

Dear Mr. Starr:

The National Marine Fisheries Service (NMFS) has received and reviewed the Environmental Assessment for the proposed maintenance dredging of the Tangier Channels Federal Project located at Tangier, Virginia, that accompanied your letter of April 23, 1982.

While the NMFS is supportive of the action proposed, there are several statements made in Section 3.01 of the assessment dealing with fish and wild-life resources that should be corrected. In the second paragraph, page 4, the statement is made that a number of forage species feed on detritus within the area. While it is true that the four species mentioned are a part of the forage base, they are not truly detrital feeders. The food sources for the four species are as follows:

1. Silverside (Menidia menidia): planktonic feeder, preying mostly on small crustaceans.
2. Mummichog (Fundulus heteroclitus): A bottom feeder preying mostly upon small crustaceans, small mollusks, annelid worms, insects, small fish and vegetable matter.
3. Striped killifish (Fundulus majalis): Also a bottom feeder preying mostly upon small mollusks, small crustaceans, small fish, insects and insect larvae.
4. White mullet (Mugil curema): Food of this species consists mainly of minute organisms mixed with quantities of mud and vegetable debris.

Also within this paragraph, it is stated that the bay anchovy (Anchoa mitchilli) is an important commercial species. While it is true that this species is a very important member of the forage base, no direct commercial fishery for this species exists. This species should also be removed from Table 2 in Appendix I.

Finally, in the third paragraph, page 4, it is stated that the oyster (Crassostrea virginica), hard clam (Mercenaria mercenaria), and the softshell clam (Mya arenaria) would survive a cover of approximately one foot of dredged material. This statement is incorrect with respect to the oyster, and likely



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not true for the other two species. The ability of various species of shellfish to survive differing amounts of sedimentation is dependent upon the physiological capability of the species to burrow and the environmental conditions existing at the site. Both temperature and dissolved oxygen play an important role in this process. As temperature decreases, so does the ability of shellfish to recover from sedimentation. Upon reaching a temperature of about 50°F, pumping rates are reduced and minimal amounts of sedimentation can result in suffocation. Should dissolved oxygen levels drop during dredging or disposal operations, shellfish and other benthic organisms would be adversely impacted.

We hope that these comments will prove useful. Should you have any questions or desire clarification of any point, please contact Mr. Edward W. Christoffers at (301)226-5771.

Sincerely,



Ruth O. Rehfus  
Branch Chief



DEPARTMENT OF THE ARMY  
NORFOLK DISTRICT, CORPS OF ENGINEERS  
FORT NORFOLK, 803 FRONT STREET  
NORFOLK, VIRGINIA 23510

NAOEN-W

REPLY TO  
ATTENTION OF:

18 May 1982

Ruth O. Rehfus  
Chief, Habitat Protection Branch  
National Marine Fisheries Service  
7 Pleasant Street  
Gloucester, Massachusetts 01930

Dear Ms. Rehfus:

This is in response to your 4 May 1982 comments pertaining to the Environmental Assessment for the Tangier Channels Federal Project. Your clarifications of the food sources for the several foragers mentioned and the role of the bay anchovy (Anchoa mitchilli) will be included in the assessment. Also, we concur that survival of various shellfish with a cover of one foot of dredged material is dependent on many different environmental factors and can not be assured. Consequently, that statement in the EA will be deleted.

Thank you for your constructive comments.

Sincerely,

JACK G. STARR  
Chief, Engineering Division

DUPLICATE



DEPARTMENT OF THE ARMY  
NORFOLK DISTRICT, CORPS OF ENGINEERS  
FORT NORFOLK, 803 FRONT STREET  
NORFOLK, VIRGINIA 23510

REPLY TO  
ATTENTION OF:

NAOEN-W

18 May 1982

Dr. Glenn Kinser  
Supervisor, Division of Ecological Services  
U.S. Fish and Wildlife Service  
1825 B Virginia Street  
Annapolis, Maryland 21401

Dear Dr. Kinser:

Thank you for your 7 May 1982 comments pertaining to the Public Notice and Environmental Assessment for the Tangier Channels Federal Project. According to your letter, the Fish and Wildlife Service concurs that there should be no significant adverse environmental impacts associated with the proposed project.

Your letter also contends that the remark in the EA concerning survival of oysters with a one foot sediment covering can not be substantiated. After reviewing this statement, we concur that oyster survival in such a case would be unlikely, and we will, following your advice, delete it from the assessment. Thank you for bringing this to our attention.

Sincerely,

JACK G. STARR  
Chief, Engineering Division

**DUPLICATE**

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COMMONWEALTH of VIRGINIA

Virginia Historical Landmarks Commission

TUCKER HILL  
EXECUTIVE-DIRECTOR

1101 EAST MAIN STREET  
RICHMOND, VIRGINIA 23219  
TELEPHONE 646-1111

May 10, 1982

Dredging of Tangier Channels  
Tangier Island  
Accomack County

Dear Mr. Starr:

Thank you for your inquiry of March 9, 1982

We know of no standing structure of historic or architectural interest that  
X would be affected by the proposed project. It seems unlikely that such a  
structure would be identified by another survey of the project area.

We know of no standing structure of historic or architectural interest that  
would be affected by the proposed project. However, a survey should be made  
by your agency to determine if any such structure is in the area of the  
project. Please contact me to discuss how the survey should be made.

The proposed project would or could affect this structure of which we have  
a record:

The information that you have supplied us about the proposed project is  
inadequate for us to determine if the project would affect any structure  
of historic or architectural interest. Please supply me with:

If this project will result in any ground disturbance, archaeological sites  
could be affected. To determine this, please contact our archaeological  
department in Williamsburg, if you have not done so already: Virginia  
Research Center for Archaeology, Wren Kitchen, College of William and Mary,  
Williamsburg, Virginia, 23186, ATTN: Ms. Ann Crossman, Phone (804) 253-4836  
(SCATS 427-4836). Your response from the VRCA should be considered as  
part two of a two-part response from the Landmarks Commission; my letter  
to you today being part one.

Yours,

C. Vernon March, III  
Environmental Officer

CVM, III