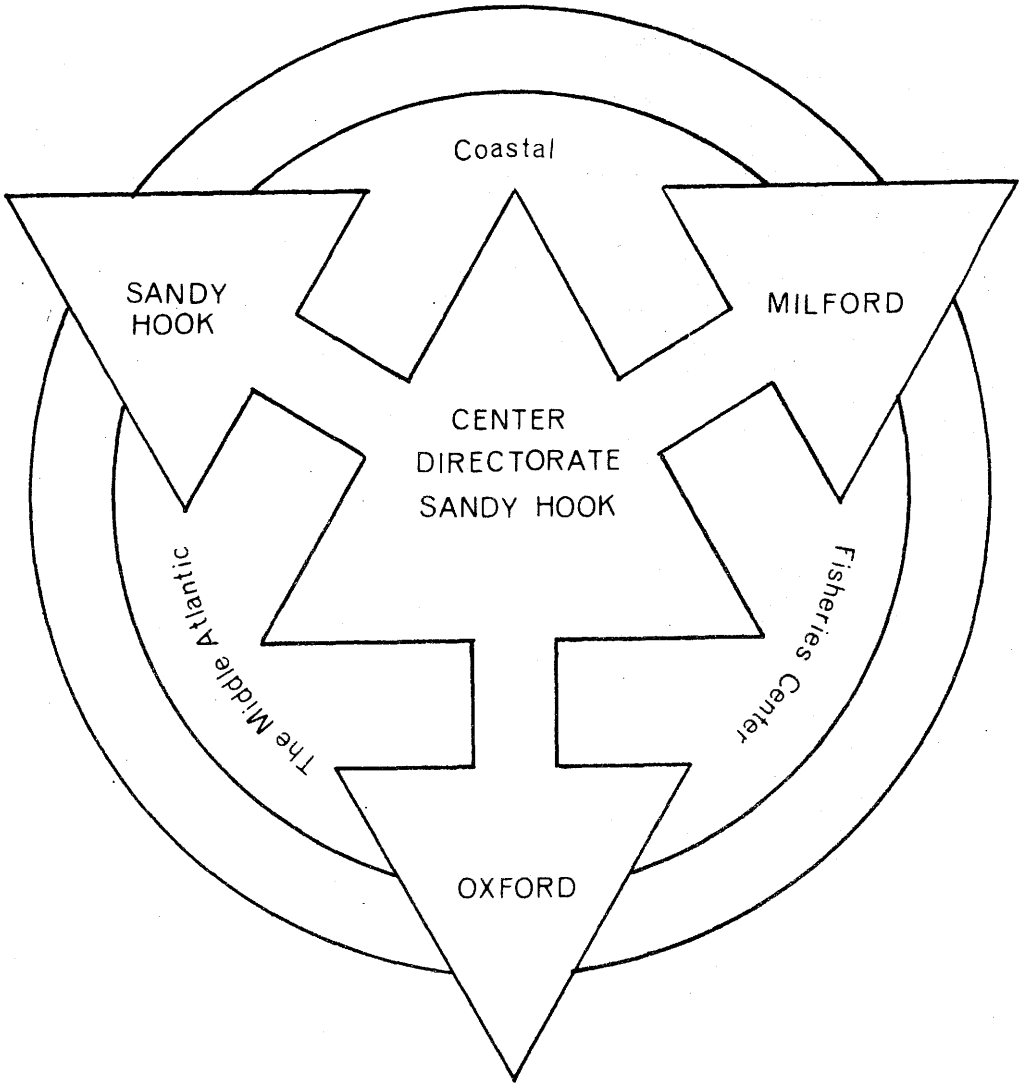
DRAFT RESEARCH PROPOSAL FOR FY 1976
MESA-NYB FUNDING: "ABNORMALITIES IN FISH AND SHELLFISH THAT MAY BE ASSOCIATED WITH COASTAL POLLUTION"

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Northeast Region

MIDDLE ATLANTIC COASTAL FISHERIES CENTER



Informal Report No. 54

March 26, 1975

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Research Proposal

Submitted by

Middle Atlantic Coastal Fisheries Center
National Marine Fisheries Service
National Oceanic and Atmospheric Administration

to

MESA-New York Bight Project Manager
Marine Ecosystems Analysis Program
Environmental Research Laboratories
National Oceanic and Atmospheric Administration

for support of studies on:

ABNORMALITIES IN FISH AND SHELLFISH THAT MAY BE ASSOCIATED WITH COASTAL POLLUTION

Total Amount Requested: $ 180,600.00

Date: _____

Approved by: _____

Principal Investigator
(301)-226-5193

_____

Carl J. Sindermann
Director, Middle Atlantic Coastal Fisheries Center

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ABNORMALITIES IN FISH AND SHELLFISH THAT MAY BE ASSOCIATED WITH COASTAL POLLUTION
(Narrative summary of proposed research)

Examination of fish samples from cruises in the New York Bight has demonstrated the statistically higher prevalence of a disease syndrome known as "fin rot" in the Bight apex, as compared with other comparable areas of the Middle Atlantic Bight. This examination will be continued at a monitoring level, particularly with winter and summer flounders, and greater attempt will be made to examine mid-water and pelagic species as well.

The onset, course, and fate of fin rot will be studied using captive animals contained in specially fabricated cages. The effect of polluted sediments on the induction of fin rot disease in winter flounder will be determined by placing caged fish in disposal areas receiving sewage sludge and dredge spoils. Additional studies will be carried out in aquaria, in which winter flounders will be exposed to sediments from dump sites.

Prevalence and distribution of other anomalies in finfish species will also be determined. Observations will be made for such anomalies as: tumors, vertebral distortions, disproportionate fin size, unusual color and scale patterns, and exophthalmic and sclerotic eyes.

Comparative histopathologic and cytologic methods such as light and electron transmission microscopy will be employed to describe normal and abnormal tissues and cells and ultracellular components from animals collected or used in the above studies. Attempts will be made to determine the etiologic agents that may cause overt disease.

Invertebrates will also be examined for abnormalities which may be related to coastal environmental degradation. Exoskeleton disease of select crustacean species will be characterized histologically. The histopathology of the exoskeleton disease of Crangon will be determined. Crustaceans (blue crab, rock crab, lady crab, lobster) with "black gill" disease will be examined for the presence of protozoan epibionts and the histopathology of necrotic lesions in gill tissues. The prevalence of abnormalities such as hyperplasia and neoplasia in bivalve mollusks from the New York Bight apex will also be determined via histologic and cytologic examination of resident species.

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Work Unit: Title: Abnormalities in Fish and Shellfish That May be Associated With Coastal Pollution

BUDGET SUMMARY - FY 1976

		% Time	MAN-MONTHS		MESA FUNDS
Personnel Service (15% Benefits - Leave Surcharge, Etc.)					
Name or Position					
Dr. A. Rosenfield, Dir. of Invest.	GS-14	10	1.2	3.6	
Dr. R. Murchelano, Fish. Biol.	GS-13	50	6.0	13.8	
*Dr. K. McNulty, Fish. Biol.	GS-14	5	0.6	1.6	
Dr. T. Sawyer, Fish. Biol.	GS-13	25	3.0	7.1	
Dr. P. Johnson, Histologist	GS-12	25	3.0	5.8	
A. Farley, Fish. Biol.	GS-12	25	3.0	6.0	
J. Ziskowski, Fish. Biol.	GS- 7	100	12.0	14.8	
S. McLean, Fish. Biol.	GS- 7	100	12.0	12.1	
(3) Student Trainees, Bio. Sci. Biol. Aid	GS- 4	100	36.0	26.7	
Overtime			1.9	3.0	
			78.7		94.5
Travel					4.5
Transportation of Things					.3
Printing and Reproduction					2.5
Computer					1.2
Contracts					
Johns Hopkins University					12.0
Support Service					.5
Capital Equipment					
2 microscopes, etc.					8.0
Supplies and Expendables					12.0
Total Direct Funds					135.5
Total Support Funds					45.1
Total Funds					180.6

* MESA Coordinator