MONTHLY REPORT

ON

MESA-FUNDED RESEARCH

MAY 1979

by

NATIONAL MARINE FISHERIES SERVICE
NORTHEAST FISHERIES CENTER
SANDY HOOK LABORATORY
HIGHLANDS, NEW JERSEY 07732

Report No. SHL 79-23 (June 1979)

Title of Study: Source of and Environmental Concentrations of Organic Compounds (I.C.7) and Organic Contaminants of Fish, Shellfish, and Plankton (I.E.1)

Principal Investigator: Vincent S. Zdanowicz

Institution or Agency: National Marine Fisheries Service
Northeast Fisheries Center
Sandy Hook Laboratory
Highlands, New Jersey 07732

Period Reported: May 1979

Planned Activity:

Planned sampling to satisfy NAS requirements.

Actual Accomplishments:

Collections were obtained of lobster (Raritan Bay); rock crabs (Raritan Bay and Ambrose). Arrangements were made for collection of four scallop samples from the Bight apex by survey personnel. Contacts were made with commercial and New Jersey fisheries staff to obtain samples of striped bass. The run is developing late this season. We have made arrangements for Sandy Hook divers to obtain surf clams as an adjunct to a developing research project off Fire Island.

Title of Study: Water Column Respiration and Release of Dissolved Organic Matter from Natural Populations of Phytoplankton (II.D.6)

Principal Investigator: Dr. James P. Thomas

Institution or Agency: National Marine Fisheries Service
Northeast Fisheries Center
Sandy Hook Laboratory
Highlands, New Jersey 07732

Period of Report: May 1979

Planned Activity:	Actual Accomplishments:
(1) Continue data analysis as proposed.	(1) Underway.
(2) Begin manuscript preparation.	(2) Statistical analyses continued.

Forecast of Activities for June:

(1) Continue data analyses as proposed.
(2) Awaiting revised data tape from Dr. Garside (BLOS). Much of our analysis is held in abeyance until receipt of data tape.

Title of Study: Environmentally-induced Mutagenesis, Cytotoxicity and Related Teratogenicity in Planktonic Fish Eggs (III.5)

Principal Investigator: Dr. A. Crosby Longwell

Institution or Agency: National Marine Fisheries Service
Northeast Fisheries Center
Milford Laboratory
Milford, Connecticut 06460

Period of Activity: May 1979

Microscopic analysis of the mackerel eggs collected on the '78 Dolphin cruise to the Bight continues. Chorion (outer egg membrane) examination of the mackerel eggs is nearing completion with three or so stations showing eggs with chorion damage.

A manuscript was submitted for the forthcoming symposium on the New York Bight. A summary review of the following topics was prepared for Dr. A. McErlean, Chairman of the Neuston Committee for the symposium:

Increased mortality of early-life stages and impacts at population level - particularly commercial fish.

Use of planktonic fish eggs as a means of monitoring biological effects of pollution in the sea - mackerel, as an example.

Ichthyoplankton component of the neuston and ocean pollution

(1) Trace metals
(2) Aromatic hydrocarbons
(3) Radioactivity
(4) Oil
(5) Atmospheric fallout
(6) Acid-iron waste
(7) Sewage sludge
    (a) Chlorination
    (b) N-nitroso compounds
(8) Oxygen demand
(9) Synergisms between pollutants and natural environmental factors
(10) Synergisms among multiplicity of contaminants in the natural environment
(11) Adaptation to pollution by natural selection
(12) Mutagens - mutation, carcinogenesis and developmental abnormalities
(13) Bibliography

This represents the first general review of pollution effects on fish eggs.