MONTHLY REPORT

ON

MESA-FUNDED RESEARCH

JUNE 1979

by

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

Report No. SHL 79-27 (July 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: June 1979

Additional samples of lobster and surf clams were collected and stored in Milford. Two to three mussel samples and a collection of striped bass remain to be collected. We are planning to visit the Atlantic Beach and/or Rockaway Beach, L.I., and Barnegat areas to complete these sampling requirements and then ship all stored materials to Seattle.

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: June 1979

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

Forecast of Activitihs for July:

(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: June 1979

A portion of all available stage mackerel eggs from the '78 Dolphin cruise samples has been examined and data collected. Next, a sampling of eggs from the extra 15 or so stations without chemistry samples will be studied microscopically to ascertain better the range of biological variability. To increase precision then additional eggs will be read of those stations with chemistry data. Just about all the eggs that will be needed for completing the analyses are dissected and awaiting examination. It appears that again, as in '74 and '77, stations will show pronounced variability. The heavy rainstorms that occurred during the '78 cruise time prevented as good sampling as in '77 and these reduced possible sampling time. We are optimistic, however, that samples are adequate for an analysis. Combination of '77 and '78 data will increase chemical sample size substantially. This is possible since correlations are within station and overall year-to-year variability of natural phenomena amounts to less than the variability encountered among stations on such as wide areal coverage as in these studies where stations range over the extent of the Bight.

An interesting new parameter being measured this year is chorion (outer egg membrane) integrity, and this too seems to vary. Thus far, James Hughes has done the cell microscopy on the '78 samples, and D. Perry, the scanning electron microscopy. Regarding the latter several hundred eggs can be prepared for study in a day's time with specially designed holding baskets, etc., for the drying and coating processes and about 70 eggs scanned in one day.

The poster display on the mackerel studies shown at the ICES, etc.-sponsored conference on the Early Life History of Fish, Woods Hole, April '79, is being summarized with 2 tables, and 3 photomicrographs in a book on the Early Life History of Fish. This write-up was forwarded to Prof. Hans Ackefors, University of Stockholm, with copies to the MESA office, Dr. R. Edwards, and Dr. K. Sherman, co-editor of the entire work with Dr. R. Lasker, La Jolla, NMFS, Laboratory.

Longwell, A. Crosby, and James B. Hughes. Cytologic, cytogenetic, and embryologic state of Atlantic mackerel eggs from surface waters of the New York Bight in relation to pollution. 2 printed pages, 2 tables, 3 photomicrographs, 6 references. For publication in Early Life History of Fish, edited by K. Sherman and R. Lasker. Symposium, Woods Hole, April 1979.