

CENTRAL FILE

MONTHLY REPORT
ON
MESA-FUNDED RESEARCH
JULY 1979

by

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

Report No. SHL 79-29 (August 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: July 1979

The last of the required biological samples was collected from Rockaway Beach, and Atlantic Beach, L.I. and from Surf City, N.J. These, and others collected earlier, were transported to Milford, Conn. to complete a package prepared for shipment to Seattle on July 31, 1979.

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: July 1979

Planned Activity:

(1) Continue data
analysis.

(2) Begin manuscript
preparation.

Actual Accomplishments:

(1) Underway. Vertical pro-
files of total and dissolved
organic matter release primary
productivity plotted.

(2) Statistical analyses
continued.

Forecast of Activities for August:

(1) Continue data analyses.

(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: July 1979

As indicated in last month's narrative, Atlantic mackerel embryos from the '78 Dolphin cruise sampled at stations without chemistry samples are now being spot-checked. Like those at previously examined stations, there are wide station differences in the quality of egg development.

By now the chorion ultrastructure of a sizable sample of mackerel eggs has been examined at most of the '78 cruise stations. Generally, those stations with poor quality embryo development at the cytological or cytogenetic level are the stations displaying pathological states of the egg chorion (outer egg membrane). These pathologies generally fall into the categories of obscure pore patterns, distinct holes in otherwise intact normal chorions, and a general advanced breakdown of the chorion. There are exceptions to the general association of embryo difficulties and chorion pathology. These are taken to mean that chorion pathology may sometimes precede embryo difficulties. It appears that including chorion examination among egg parameters studied in field collections is worthwhile.

Experimental studies are underway under separate support to define the effects of different hydrocarbon pollutants on the egg membranes. Also, the normal pathology of the chorion of eggs with moribund embryos is to be described for eggs which (1) can still stay afloat (as would be included in field plankton samples), and (2) eggs which can no longer maintain themselves in the water column (not sampled at least in the neuston). Such work should make more meaningful the interpretation of the mackerel field data. Unlike the cytological and cytogenetic work, where observations on other groups could be related to the mackerel, there is no literature on chorion pathology.