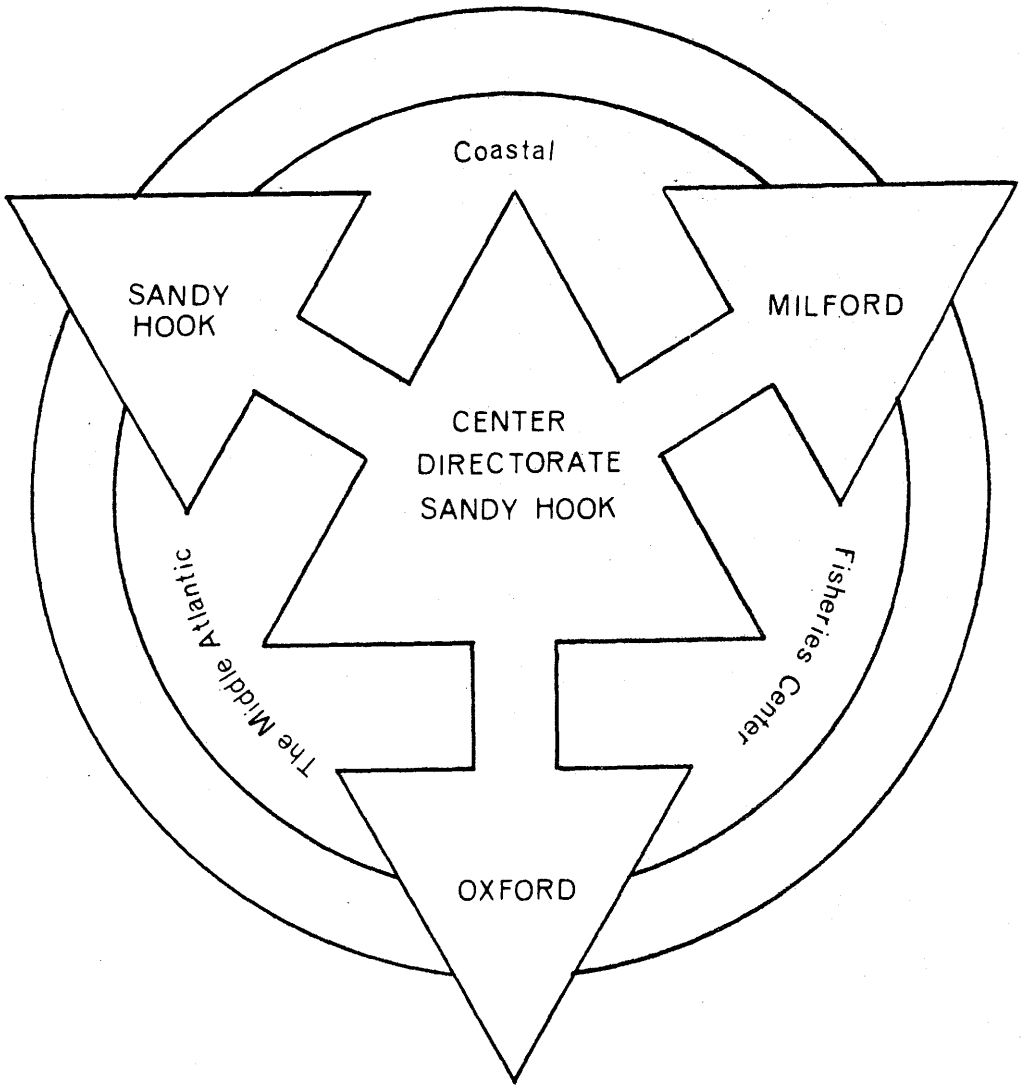
SUB-TASK PROGRESS REPORT
FISCAL YEAR 1976 - FIRST HALF

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

MIDDLE ATLANTIC COASTAL FISHERIES CENTER



Informal Report #109
April 1976

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Middle Atlantic Coastal Fisheries Center
Highlands, New Jersey 07732

April 19, 1976 F16

TO: Assoc. Director for Resource Research, F1
Attn: Mary LoPresti, National Marine Fisheries Service
Washington, D. C. 20235

FROM: Carl J. Sindermann
Director, Middle Atlantic Coastal Fisheries Center

SUBJECT: STPR's - 1/2 "half"-year, fiscal '76

Attached are the finished STPR's for this Center for the 9-month period ending 30 March, 1976. The STPR's are arranged in three (3) groups, reflecting our work in (1) MARMAP-type (resource assessment), (2) Habitat Protection, and (3) Aquaculture. We are pleased to announce that the new adjustment (the consolidation of STPR's on STP face sheets) greatly facilitated a critical statistical review of the productivity of our various Task groups. We are proud to present the analysis:

No. of Work Units (total)	No. of Work Units completed scheduled this Period	Slippage	% Completion
473	332	61	82%

Cause of slippages:

1. Lack of manpower 29
2. Lack of seasonal data: 5
3. Lack of equipment: 5
4. Lack of financial support: 3
5. Receipt of additional data: 3
6. Postponed/Suspended: 16

It is immediately apparent that an enormous amount of significant work has been done. It is also apparent that continued level funding (despite galloping inflation) and continued manpower constraints (despite very large increases in work-goals, i.e., MAC-002, where 6 bimonthly survey cruises were completed instead of the usual biannual (2) cruises. These additional cruises were performed because we, and the staff, recognized the pressing need for much additional infor- on the resource if we are to ready for management), are taking their toll. Slippage causes #1, #3, #4, and #6 may be directly attributed to the effects of these continuing constraints.

We have considered the options open to us: (1) reduction in number of Tasks and transfer of manpower, and (2) continuation of all Tasks as long as a reasonable acceptable level of productivity is maintained. We have taken the first alternative. Two Tasks are to be terminated and the personnel transferred to strengthen other key Tasks. We trust that the importance of our work and our productivity will elicit similar helpful actions by your office for fiscal 76T and subsequent fiscal years.

For what will be obvious reasons, we have submitted separate copies of STPR's for MAC-055-(11) and of MAC-069-(04) to the MARMAP and the Habitat Coordinators; for MAC-055-(02) to Aquaculture and to Habitat Protection Coordinators and for MAC-058-(01) to Aquaculture and to Habitat Protection Coordinators. Please note that the attached MAC-058-(01) was originally submitted, in error, as MAC-016-(05). The STPR for MAC-070- Proliferative Cells in Mollusks has not yet been received in the Center. It will be forwarded upon receipt.

Attachments

Table of Contents

		Page
Resource Assessment Investigations		
MAC-002-01	Groundfish Assessment - Autumn Cruise	1
-02	" " - Spring Cruise	3
-03	Ocean Shellfish Assessment - Invertebrates	5
-04	Groundfish Assessment - Bimonthly Surveys	10
-05	Juvenile Fishes - Distribution and Recruitment	12
MAC-005-01	Biostatistics; Middle Atlantic Sportfish	14
-02	Fishery Analysis; Middle Atlantic Sportfish - New Jersey	16
-03	" " " " " - Tilefish	18
-04	" " " " " - Contest Catches	20
-05	" " " " " - Species Briefing Books	23
-06	" " " " " - Stock Assessment	25
-07	" " " " " - Biometric Services	30
-08	" " " " " - Data Management	32
MAC-053-01	Prerecruits - Distribution and Abundance	34
-02	" - Diurnal Activities - Field Work	37
-03	" - Manuscript Preparation - Analysis of Data	39
MAC-055-11	MESA; Analysis of Groundfish Samples	42
MAC-060-01	Biological Assessment; Sportfish - Historical Data Analysis	44
-02	" " " - Spot, Weakfish and Croaker	46
-03	" " " - Gulf, Southern, Broad and Summer Flounders	49
-04	" " " - Life Histories; New York Bight Finfishes	51
-05	" " " - Age Determinations; Selected Finfish	53
MAC-065-01	MARMAP (AEC Reimbursable) - Ichthyoplankton Survey, N.Y. Bight	56
-02	" " " - Ichthyoplankton Data Atlas	58
-03	" " " - Diurnal Activities - Lab Work	60
MAC-069-04	Groundfish Survey - Block Island Sound	63

Page

Ecosystems Investigations

MAC-006-01 Behavior of Fishes Under Stress - Field Studies 65
-02 " " " " " - Laboratory Studies. 67

MAC-007-01 EI; Raritan Bay and Long Island Sound 70
-02 EI; Deepwater Studies, Oil and Waste Disposal Sites 73

MAC-008-01 EI; Biochemical Modeling - Organically Bound Metals - Physiology. . . 76
-02 EI; " " - Environmental Forms of Heavy Metals . . . 80

MAC-009-01 EI; Microbiology & Chemistry: Marine Microbial Ecology. 82
-02 EI; " " " : Heavy Metal Contamination 86

MAC-055-01 MESA: NYB Biological Oceanography - Sample Analysis 90
-02 " " " " - Mutagenic Effects 95
-03 " " " " - Abnormalities in Fish/Shellfish . 97
-11 " " " " - Analysis Ground Fish Samples . . 100

MAC-061-01 Behavior of Fishes Under Stress (ERDA Reimbursable) -
Juvenile Bluefish and Mullet 102

MAC-067-01 Primary Productivity - Seabed Oxygen Consumption 105
-02 " " - Ecology of Phytoplankton "Blooms". 108
-03 " " - Phytoplankton 113

MAC-069-01 EI; Effects of Dredge Spoil Disposal - New London, Ct. 115
-04 EI; Groundfish Survey: Block Island Sound 120

MAC-073-01 Behavior of Fishes Under Stress (ERDA Reimbursable) -
Marine Invertebrates 122

Experimental Biology Investigations

MAC-015-01 Physiological Effects of Pollutant Stress - Physioecology 124
-02 " " " " " - Physiological Effects . . 128
-03 " " " " " - Biochemical Effects . . . 132

MAC-055-02 MESA: NYB Biological Oceanography - Mutagenic Effects 136

MAC-056-01 Aquacultural Genetics: Hybridization and Inbreeding 139
-02 " " : Selective Breeding. 144

MAC-057-01 Nutritional Requirements of Mollusks - Laboratory Culture 148
-02 " " " " - Mass Cultivation 151
-03 " " " " - Nutritional Studies. 153
-04 " " " " - Effects of Pollutants 155

Page

MAC-058-01 Aquaculture - Control of Disease: Larval Mollusks 157

MAC-059-01 Spawning & Rearing of Molluscs - Scallops 161
-02 " " " " " - Surf Clams 164

Pathobiology Investigations

MAC-016-01 EI; Comparative Pathobiology - Molluscan 167
-02 EI; " " - Crustacean 170
-03 EI; " " - Finfish 173
-04 EI; " " - Histological Services 176

MAC-017-01 EI; Disease & Environmental Stress - Fin Rot Disease 178
-02 EI; " " " " - Immunities in Fish. 181
-03 EI; " " " " - Microfauna of Living Marine Organisms 184
-04 EI; " " " " - Ultrastructural Studies 187
-05 EI; " " " " - Marine Pathology Registry . . . 191

MAC-058-01 Aquaculture: Control of Disease: Larval Mollusks. 194

AA FORM 32-15A
74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
AC-002-76-S2-A-1	1A(2)	10/25/74

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
3A2P1	FB6200	Sandy Hook Laboratory - 162	MAC-002-75-S2-A-1(01)

SUBTASK SUFFIX	11. TASK TITLE
01	MARMAP II: Multispecies, Middle Atlantic Bight

NUMBER OF STP'S	12. SUBTASK TITLE
5	Groundfish Assessment: Autumn Cruise - Fall 75

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS	A. START DATE *(Estimated/Firm)* N/A	A. NAME Resource Assessment Investigations
TOTAL FUNDS	B. END DATE N/A	
SOURCE MFS	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
MAN YEARS .1	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A

SPECIES	19. LIFE STAGE(S)
ultispecies: Demersal finfishes	Juvenile, Adult

WORK LOCATION	21. PERCENT RECREATIONAL
ddle Atlantic Bight	50%

KEY WORDS
oundfish Assessment
stribution and abundance
ecies composition

SUBTASK OBJECTIVES AND METHODOLOGY
an and coordinate fall cruise. Complete cruise, including distribution of special mples, (species intensity, contaminant, water, plankton) and complete and distribute uise reports. Complete data processing.

OFFICIAL PREPARING REPORT *(Signature)*
Arnold A. Christensen for
rthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann
Carl J. Sindermann

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-002-76-S2-A-1 (01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
.	A	Plan and coordinate cruise. PROGRESS FIRST HALF: Completed on schedule.	X	-	-	- X														
2	E	Complete fall cruise - distribute special samples. PROGRESS FIRST HALF: Completed on schedule, 190 trawl stations completed, special samples distributed.				X	X													
3	A	Complete and distribute cruise report. PROGRESS FIRST HALF: Cruise report completed; distribution delayed due to typing and copying difficulties.					X	- X												
1	A	Process data (including final listings) and forward tapes to NEFC. PROGRESS FIRST HALF: Processing completed on schedule and tapes forwarded to NEFC for offshore segment. Inshore segment behind schedule due to ADP delays. Final listings behind schedule due to ADP delays.					X	-	-	-	-	-	-	- X						

OAA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
IAC-002-76-S2-A-1	1A(2)	10/25/74

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
8A2P1	FB6200	Sandy Hook Laboratory - 162	MAC-002-75-S2-A-1(01)

. SUBTASK SUFFIX	11. TASK TITLE
02	MARMAP II: Multispecies, Middle Atlantic Bight

. NUMBER OF STP'S	12. SUBTASK TITLE
5	Groundfish Assessment: Spring Cruise FY 76

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)* N/A	A. NAME: Resource Assessment Investigations
. TOTAL FUNDS	B. END DATE N/A	
. SOURCE: MFS	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
MAN YEARS: .0	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A

. SPECIES	19. LIFE STAGE(S)
ultispecies; Demersal finfishes	Juvenile, Adult

. WORK LOCATION	21. PERCENT RECREATIONAL
iddle Atlantic Bight	50%

. KEY WORDS

roundfish assessment
pecies composition
Distribution and abundance

SUBTASK OBJECTIVES AND METHODOLOGY

lan and coordinate spring cruise. Complete spring survey cruise, including distribution f special samples (species intensity, contaminant, plankton and water samples). omplete and distribute cruise report. Complete data processing (hand processing, eypunching, correcting units).

OFFICIAL PREPARING REPORT *(Signature)*	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Harry J. Christensen for thur S. Merrill	Carl J. Sindermann Carl J. Sindermann

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-002-76-S2-A-1 (02)

—NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
	A	Plan and coordinate cruise. PROGRESS FIRST HALF: Completed on schedule.					X	-	-	- X										
2	E	Complete spring survey; distribute samples. PROGRESS FIRST HALF: Survey completed on schedule; 174 trawl stations occupied.								X	- X									
3	A	Complete and distribute cruise report. PROGRESS FIRST HALF: On schedule.									X	- X								
	A	Complete data processing (including final listings) and forward tapes to NEFC. PROGRESS FIRST HALF: Not scheduled.										X	-	-	-	-	-	-	X	

NOAA FORM 32-15A
(4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-002-76-S2-A-1	1A(2)	10/25/74

6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
88A2P1	FB6200	Sandy Hook Laboratory - 162	MAC-002-75-S2-A-1(03)

10. SUBTASK SUFFIX	11. TASK TITLE
03	MARMAP II: Multispecies; Middle Atlantic Bight

13. NUMBER OF STP'S	12. SUBTASK TITLE
5	Resource Assessment - Invertebrates

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Resource Assessment Investigations
B. TOTAL FUNDS	B. END DATE: N/A	
C. SOURCE	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
D. MAN YEARS: 2.5	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

18. SPECIES
Surf clam, hard clam, ocean quahog, sea scallop, oyster

19. LIFE STAGE(S): All

20. WORK LOCATION: Middle Atlantic Bight

21. PERCENT RECREATIONAL: 0

22. KEY WORDS
Shellfish, Commercial Fishery, Distribution, Size composition

23. SUBTASK OBJECTIVES AND METHODOLOGY
Complete Ms. on surf clams, hard clams, scallops and oysters. Complete surf clam and scallop assessment cruises and complete cruise reports. Continue participation in State-Federal management program for surf clams. Analyze hard clam assessment data from Raritan Bay. Submit proposals for mortality studies of shellfish.

24. OFFICIAL PREPARING REPORT *(Signature)*
Harry J. Christensen for
Arthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann
Carl J. Sindermann

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-002-76-S2-A-1 (03)

—NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
1	A	Ms: Atlantic coast surf clam fishery, 1974. PROGRESS FIRST HALF: On schedule; Ms in review.	X-	-	-	-	-	-	-	-	-	-	-	-X						
2	A	Ms: Summary Report - Atlantic coast surf clam fishery, 1965-1974. PROGRESS FIRST HALF: On schedule.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-X
3	A	Ms: ASMFC Leaflet - Surf clams. PROGRESS FIRST HALF: On schedule; Ms in review.	X-	-	-	-	-	-X												
	A	Ms: Surf clam survey, New Jersey coast, 1972. PROGRESS FIRST HALF: On schedule; Ms in review.	X-	-	-	-	-	-	-	-	-	-	-	-X						
	A	Complete analysis of 5-years survey data 1966-1970. PROGRESS FIRST HALF: Behind schedule; anticipate 6 month delay. ADP processing delayed due to higher priority work.	X-	-	-	-	-	-	-X											

OAA FORM 32-15B
(-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX

MAC-002-76-S2-A-1 (03)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

—NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
1	A	Ms: Atlantic coast surf clam fishery, 1974. PROGRESS FIRST HALF: On schedule; Ms in review.	X-	-	-	-	-	-	-	-	-	-	-	-X						
2	A	Ms: Summary Report - Atlantic coast surf clam fishery, 1965-1974. PROGRESS FIRST HALF: On schedule.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-X
3	A	Ms: ASMFC Leaflet - Surf clams. PROGRESS FIRST HALF: On schedule; Ms in review.	X-	-	-	-	-	-X												
4	A	Ms: Surf clam survey, New Jersey coast, 1972. PROGRESS FIRST HALF: On schedule; Ms in review.	X-	-	-	-	-	-	-	-	-	-	-	-X						
5	A	Complete analysis of 5-years survey data 1966-1970. PROGRESS FIRST HALF: Behind schedule; anticipate 6 month delay. ADP processing delayed due to higher priority work.	X-	-	-	-	-	-	-X											

OAA FORM 32-15B
(-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-002-76-S2-A-1 (03)

—NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
5	A	Complete analyses and tabulate data from gametogenesis studies of surf clams. PROGRESS FIRST HALF: Inactive due to higher priority work items and State-Federal work.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
7	A	Complete analysis and prepare report of Raritan Bay hard clam assessment and biological study. PROGRESS FIRST HALF: Preliminary report submitted on schedule.	X	-	-	-	-	X												
8	A	Complete analysis and tabulation of data from gametogenesis studies of hard clams. PROGRESS FIRST HALF: Inactive due to higher priority items and State-Federal work, and lack of proper microscope.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
	E	Initiate and complete surf clam assessment cruise. PROGRESS FIRST HALF: On schedule.											X	X						
0	A	Complete surf clam cruise report. PROGRESS FIRST HALF: None scheduled.													X	-	-	X		

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-002-76-S2-A-1(03)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
1	A	Participation in State-Federal management of surf clams. PROGRESS FIRST HALF: On schedule.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X→
2	E	Initiate and complete sea scallop assessment cruise. PROGRESS FIRST HALF: Completed on schedule.		X	-	-	X													
3	A	Complete sea scallop cruise report. PROGRESS FIRST HALF: Completed on schedule.				X	-	-	X											
4	A	Complete analysis of invertebrates collected in association with sea scallop survey. PROGRESS FIRST HALF: On schedule.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X→
5	A	Complete and submit proposals for mortality studies of sea scallops, hard clams and surf clams. PROGRESS FIRST HALF: Proposals delayed but are in progress.	X	-	-	-	-	-	X											

DAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX

MAC-002-76-S2-A-1 (03)

—NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
5	A	Ms: Ecology of oyster populations. PROGRESS FIRST HALF: First draft completed on schedule, typing delays encountered.	X	—	—	—	—	—	—	—	—	—	—	X						
7	A	Ms: Increasing stocks of hard clams through predator control. PROGRESS FIRST HALF: Second draft completed on schedule,	X	—	—	—	—	—	—	—	X									
8	A	Ms: Comparative annual oyster setting in Connecticut and New Jersey. PROGRESS FIRST HALF: Second draft completed on schedule,	X	—	—	—	—	—	—	—	X									
9	A	Ms: Rehabilitation of the oyster industry in Mississippi. PROGRESS FIRST HALF: On schedule.					X	—	—	—	—	—	—	X						

NOAA FORM 32-15A
(4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER: MAC-002-76-SA-A-1		4. SUB-OBJECTIVE CODE: 1A(2)	5. PRIOR DATE: New STP
6. TASK NUMBER: 38A2P1	7. ORGANIZATION CODE: FB6200	8. FACILITY: Sandy Hook Laboratory - 162	9. PRIOR TDP NO. PLUS STP SUFFIX:
10. SUBTASK SUFFIX: 04	11. TASK TITLE: MARMAP II: Multispecies, Middle Atlantic Bight		
13. NUMBER OF STP'S: 5	12. SUBTASK TITLE: Groundfish Assessment - Bimonthly Survey		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Resource Assessment Investigations
B. TOTAL FUNDS	B. END DATE: N/A	
C. SOURCE: NMFS	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
D. MAN YEARS: 3.0	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

18. SPECIES: Multispecies; Demersal finfishes

19. LIFE STAGE(S): All

20. WORK LOCATION: Middle Atlantic Bight

21. PERCENT RECREATIONAL: 50%

22. KEY WORDS: Groundfish Assessment
Distribution and abundance Species composition

23. SUBTASK OBJECTIVES AND METHODOLOGY

Plan and coordinate cruises, complete cruises and distribute special samples (life history collections, contaminant, diseased fish), Complete and distribute cruise report. Prepare summary report.

24. OFFICIAL PREPARING REPORT *(Signature)*
Arthur S. Merrill for

25. FMC DIRECTOR ~~OR DESIGNATED~~ REPRESENTATIVE *(Signature)*
Carl J. Sindermann

AA FORM 32-15B
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-002-76-SA-A-1 (04

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Plan and coordinate bimonthly cruises. PROGRESS FIRST HALF: Completed on schedule. Some changes anticipated in second half due to budgetary considerations. Bimonthly will probably become quarterly.			X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	Complete cruises and distribute samples. PROGRESS FIRST HALF: Completed on schedule.			X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	Complete and distribute cruise reports. PROGRESS FIRST HALF: Cruise reports completed on schedule. Distribution delayed due to copying restrictions.			X	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	Process data (hand and machine). PROGRESS FIRST HALF: Hand processing on schedule, some machine processing delays due to ADP backlog.			X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	Prepare summary reports of FY 76 cruises. PROGRESS FIRST HALF: Not scheduled.												X-	-	-	-	X		

OAA FORM 32-15A
1-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-002-76-SA-A-1	1A(2)	10/25/74

. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
38A2P1	FB6200	Sandy Hook Laboratory - 162	MAC-002-75-S2-A-1(11)

0. SUBTASK SUFFIX	11. TASK TITLE
05	MARMAP II: Multispecies, Middle Atlantic Bight

1. NUMBER OF STP'S	12. SUBTASK TITLE
5	Juvenile fish distribution and recruitment

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Resource Assessment Investigations
3. TOTAL FUNDS	B. END DATE: N/A	
C. SOURCE: MFS	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
0. MAN YEARS: .5	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

8. SPECIES	19. LIFE STAGE(S)
ultispecies	Juveniles

0. WORK LOCATION	21. PERCENT RECREATIONAL
iddle Atlantic Bight	50%

2. KEY WORDS
uvenile fish
ecruitment
Species composition
Relative abundance
Seasonal movements and availability

3. SUBTASK OBJECTIVES AND METHODOLOGY
ollect and store data on juvenile fishes from current cruises. Begin analysis of data, omplete report showing distribution of juveniles. Begin analysis of data for relative oundance of juveniles. Begin Ms. on trends and abundance and distribution of juvenile ish.

24. OFFICIAL PREPARING REPORT *(Signature)*	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Arthur S. Merrill for	Carl J. Sindermann

DAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX

MAC-002-76-SA-A-1 (05)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
	A	Collect and store data on juvenile fish components from ongoing cruises. PROGRESS FIRST HALF: On schedule.			X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	A	Begin analysis of data for juvenile fish distribution. PROGRESS FIRST HALF: On schedule.			X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	A	Prepare report showing distribution of juveniles. PROGRESS FIRST HALF: Minor schedule lag due to cruise commitments, 1-2 month delay anticipated.				X	-	-	-	-	-	-	-	X						
	A	Develop a standardization for expressing relative abundance. PROGRESS FIRST HALF: On schedule.								X	-	-	-	-	-	-	-	-	-	-
	A	Begin juvenile fish Ms. PROGRESS FIRST HALF: Not scheduled.												X	-	-	-	-	-	-

)AA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/76

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-005-76-RF-A-1	3A(3)	10/25/74

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
88F9P4	FB6200	Sandy Hook Laboratory - 162	MAC-005-75-FA-A-1(01)

). SUBTASK SUFFIX	11. TASK TITLE
01	Fishery Analysis: Middle Atlantic Sportfish

. NUMBER OF STP'S	12. SUBTASK TITLE
8	Biostatistics; Middle Atlantic Sportfish

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)* N/A	A. NAME Resource Assessment Investigations
. TOTAL FUNDS	B. END DATE N/A	
. SOURCE NMFS	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
. MAN YEARS .5	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A

. SPECIES	19. LIFE STAGE(S)
Multispecies	Juvenile and Adult
. WORK LOCATION	21. PERCENT RECREATIONAL
Ocean City, Maryland	80%

. KEY WORDS
Recreational fishing
Survey

. SUBTASK OBJECTIVES AND METHODOLOGY

Survey a small geographical area along the coast (Ocean City, Md.) for a prototype study. Sample total recreational fishermen to determine total catch, catch per unit of effort, and catch by species routinely throughout the year. Collect data by field people sampling fishermen, crabbers, and clammers using a random sampling schedule and stratification of the study area and time period.

. OFFICIAL PREPARING REPORT *(Signature)*
Harry J. Christensen for
Arthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann
Carl J. Sindermann

AA FORM 32-15B
(-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX

MAC-005-76-RF-A-1(01)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Process field data through ADP.	X	-	-	-	-	-	X											
	PROGRESS FIRST HALF: Behind schedule due to lack of access to computer programmer. 75% completed.																		
A	Subject data to statistical tests.	X	-	-	-	-	-	-	-	X									
	PROGRESS FIRST HALF: Behind schedule due to lack of access to computer programmer. 50% completed.																		
A	Prepare semi-annual reports.						X	-	X				X	-	X				
	PROGRESS FIRST HALF: 1st Semi-Annual Report deleted from schedule due to diversion of man power to retrieve Atlantic bluefin tuna data from New Jersey creel census (See MAC-005 (02) 2-A).																		

)AA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-005-76-RF-A-1	3A(3)	New STP

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
88F9P4	FB6200	Sandy Hook Laboratory - 162	

). SUBTASK SUFFIX	11. TASK TITLE
02	Fishery Analysis: Middle Atlantic Sportfish
. NUMBER OF STP'S	12. SUBTASK TITLE
8	Biostatistics; Middle Atlantic Sportfish, New Jersey

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Resource Assessment Investigations
. TOTAL FUNDS	B. END DATE	
. SOURCE: NMFS	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
. MAN YEARS: 1.6	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

. SPECIES	19. LIFE STAGE(S)
Multispecies	Juvenile, Adult
. WORK LOCATION	21. PERCENT RECREATIONAL
New Jersey Coastline	100%

. KEY WORDS
Recreational fishing
Survey

. SUBTASK OBJECTIVES AND METHODOLOGY
Survey major fishing ports along the New Jersey coast using techniques developed in the Ocean City prototype study. Sample recreational fishermen to determine catch, catch per unit effort and species composition of the catch. Collect data using a stratified study area and time period.

OFFICIAL PREPARING REPORT *(Signature)*
Merrill A. Christensen for
Arthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann
Carl J. Sindermann

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-005-76-RF-A-1(02)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Conduct field survey of recreational fishermen.	X-	-	-	-	-	-	-	-	-	-	-	-X						
	PROGRESS FIRST HALF: On schedule.																		
A	Process field data through ADP.							X-	-	-	-	-	-	-	-	-	-X		
	PROGRESS FIRST HALF: 50% of data provessed ahead of schedule so bluefin tuna data could be retrieved.																		
A	Prepare semi-annual report.						X-	-X					X-	-X					
	PROGRESS FIRST HALF: Behind schedule due to diversion of effort to retrieve bluefin tuna data from first 6 months of data.																		
A	Subject processed data to statistical tests.																	X-	-X
	PROGRESS FIRST HALF: None - Scheduled for FY 77.																		
A	Begin Ms. of New Jersey recreational fishery.																	X-	- - - →
	PROGRESS FIRST HALF: None - Scheduled for FY 77.																		

)AA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
AC-005-76-RF-A1	3A(3)	10/25/74

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
8F9P4	FB6200	Sandy Hook Laboratory -162	MAC-005-75-FA-A-1(02)

). SUBTASK SUFFIX	11. TASK TITLE
03	Fishery Analysis: Middle Atlantic Sportfish

. NUMBER OF STP'S	12. SUBTASK TITLE
8	Tilefish Fishery - Middle Atlantic Bight

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Resource Assessment Investigations
. TOTAL FUNDS	B. END DATE: N/A	
. SOURCE: NMFS	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
. MAN YEARS: .2	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

. SPECIES	19. LIFE STAGE(S)
Tilefish	Juvenile, Adult

. WORK LOCATION	21. PERCENT RECREATIONAL
Middle Atlantic Bight	80%

. KEY WORDS
ilefish Recreational fishing
ishery

. SUBTASK OBJECTIVES AND METHODOLOGY

etermine the various sportfish and commercial vessels that are engaged in tilefishing ong the Middle Atlantic Bight, the area where they, fish and the total catch. Sample shermen and determine catch per unit of effort. Search the literature for historical nformation on tilefish in the area and interview fishermen that have been or are now resently engaged in tilefishing.

. OFFICIAL PREPARING REPORT *(Signature)*
Aaryl J. Christensen for
Arthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann
Carl J. Sindermann

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX
MAC-005-76-RF-A-1 (03)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18-month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
	Complete Ms. final report.	X	-	-	-	-	-	-	-	X									

PROGRESS FIRST HALF: Behind schedule due to diversion of key personnel to assist on survey cruises (MAC-002 (01) 2E) and to retrieve bluefin tuna data (MAC-005 (02) 2A). Only .2 man-years was allotted for this project.

)AA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
'O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-005-76-RF-A-1	3A(3)	10/25/74

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
38F9P4	FB6200	Sandy Hook Laboratory - 162	MAC-005-75-FA-A-1(04)

. SUBTASK SUFFIX	11. TASK TITLE
)4	Fishery Analysis: Middle Atlantic Sportfish

. NUMBER OF STP'S	12. SUBTASK TITLE
8	Saltwater Fishing Contest Catches

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Resource Assessment Investigations
. TOTAL FUNDS	B. END DATE	
. SOURCE: NMFS	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
. MAN YEARS: .4	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

. SPECIES	19. LIFE STAGE(S)
Bluefish Weakfish Cod Striped bass	Adult
. WORK LOCATION: Atlantic Coast	21. PERCENT RECREATIONAL: 100%

. KEY WORDS
ecreation fishing
atches Migrations

. SUBTASK OBJECTIVES AND METHODOLOGY

rocess contest catch records filled out by anglers fishing along the coast from Maine o Delaware. Calculate a quality of fishing index by using catch rates by geographical rea by time. Use catch locations by various size fish to determine movements and igrations. Prepare a report for fishing clubs, and begin preparation of a Ms. on atch patterns and angler success in the tournament area.

OFFICIAL PREPARING REPORT *(Signature)*	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Harry J. Christensen for Arthur S. Merrill	Carl J. Sindermann Carl J. Sindermann

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-005-76-RF-A-1(04)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Complete processing of 1974 contest catch records. PROGRESS FIRST HALF: Completed on schedule.	X																	
A	Calculate quality-of-fishing index (1974 data) PROGRESS FIRST HALF: Item 2A deleted as it requires two full years of data to calculate index.			X	----	X													
A	Determine movements and migrations (1974 data). PROGRESS FIRST HALF: Completed on schedule for bluefish and striped bass. Insufficient data exists to determine movements for cod and weakfish.	X	----	----	----	X													
A	Prepare a report for distribution to participating fishing clubs (1974 data). PROGRESS FIRST HALF: Behind schedule. Accomplishments include report on striped bass and 50% completion of bluefish report.	X	----	----	----	X													
A	Prepare Ms. (1974 data). PROGRESS FIRST HALF: Ms on bluefish initiated but behind schedule due to diversion of effort to produce Scombrid Ms in response to requests from recreational fishermen.	X	----	----	----	----	----	----	X										
A	Complete processing of 1975 catch data. PROGRESS FIRST HALF: Behind schedule. Data for 1975 not yet received from Schaefer.							X	----	----	----	----	X						

AA FORM 32-15B
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TOP NO. PLUS STP SUFFIX: MAC-005-76-RF-A-1(04)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Calculate quality-of-fishing index and compare with prior index (1975 data). PROGRESS FIRST HALF: Not scheduled until FY 77.															X-	--	-X	
A	Determine movements and migrations (1975 data). PROGRESS FIRST HALF: Not scheduled until FY 77.													X-	--	--	--	--	-X
A	Prepare report for participating fishing clubs (1975 data). PROGRESS FIRST HALF: Not scheduled until FY 77.																	X-	->
A	Prepare Ms. (1975 data). PROGRESS FIRST HALF: Not scheduled until FY 77.																		X->

OAA FORM 32-15A
(1-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

. TDP NUMBER: MAC-005-76-RF-A-1		4. SUB-OBJECTIVE CODE: 3A(3)	5. PRIOR DATE: 10/25/74
. TASK NUMBER: 88F9P4	7. ORGANIZATION CODE: FB6200	8. FACILITY: Sandy Hook Laboratory - 162	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-002-75-S2-A-1(05)
0. SUBTASK SUFFIX: 05	11. TASK TITLE: Fishery Analysis - Middle Atlantic Sportfish		
1. NUMBER OF STP'S: 8	12. SUBTASK TITLE: Status of Stocks (Species Briefing Books)		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Resource Assessment Investigations
. TOTAL FUNDS	B. END DATE: N/A	
. SOURCE: NMFS	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
. MAN YEARS: .5	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

8. SPECIES: Multispecies	19. LIFE STAGE(S): All Stages
0. WORK LOCATION: Sandy Hook, N. J.	21. PERCENT RECREATIONAL: 60%

2. KEY WORDS
Briefing Books, Biology and Economics, Fisheries, Capsule Life Histories

. SUBTASK OBJECTIVES AND METHODOLOGY
Compile data and assemble briefing books, including literature search and compilation of available catch statistics. Complete drafts and submit to Resource Assessment Investigations. Continue updating books. Select most complete and edit for publication.

. OFFICIAL PREPARING REPORT *(Signature)* Arthur S. Merrill	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)* Carl J. Sindermann

AA FORM 32-15B
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-005-76-RF-A-1(05)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Reassign incompleted breifing books including literature review, biological information, fisheries and catch/effort statistics. PROGRESS FIRST HALF: Completed on schedule.	X	--	--	X														
A	Complete initial drafts (reassigned ones) and submit to Director of Investigations. PROGRESS FIRST HALF: Six out of 21 briefing books are completed for outside review on schedule. Drafts of other 15 briefing books are completed.			X	--	--	--	--	--	--	X								
A	Continue updating books. PROGRESS FIRST HALF: Fluke, butterfish and scup books are updated. Working actively on other books.	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E	Prepare publications as MACFC Technical Paper series or other appropriate outlet. PROGRESS FIRST HALF: N/A									X	--	--	--	--	--	--	--	--	X

OAA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER		4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-005-76-RF-A-1		3A(3)	New STP
TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
88F9P4	FB6200	Sandy Hook Laboratory - 162	
. SUBTASK SUFFIX	11. TASK TITLE		
06	Fishery Analysis - Middle Atlantic Sportfish		
NUMBER OF STP'S	12. SUBTASK TITLE		
8	Stock Assessment of Selected Species		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS	A. START DATE *(Estimated/Firm)* N/A	A. NAME: Resource Assessment Investigations
TOTAL FUNDS	B. END DATE N/A	
SOURCE: NMFS	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
MAN YEARS: 7	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A
SPECIES: Multispecies		19. LIFE STAGE(S): Juvenile and Adult
WORK LOCATION: Sandy Hook, N. J.		21. PERCENT RECREATIONAL: 60%

KEY WORDS
Finfish, shellfish, assessment - recruitment mortality Population growth stock identification fisheries MSY

SUBTASK OBJECTIVES AND METHODOLOGY

To assess stocks of selected species from integration of age, weight, growth, and mortality parameters. Develop estimates of population size and relate these to fishery management strategies.

OFFICIAL PREPARING REPORT *(Signature)*	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Harry J. Christenson for Arthur S. Merrill	Carl J. Sindermann

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-005-76-RF-A-1(06)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
E	Complete summer flounder manuscript (ICNAF 75/69) for publication. PROGRESS FIRST HALF: Completed on schedule. Published by ICNAF Selected Paper No. 1, 1976, P. 59-71.	X	X	X															
A	Continue update analysis for summer flounder stock assessment. PROGRESS FIRST HALF: No progress. Updated catch statistics and age data for 1976, not yet available.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-X
A	Review literature and unpublished information on butterfish and scup. PROGRESS FIRST HALF: Completed on schedule.		X-	--	-X														
A	Review literature and unpublished information on weakfish and bluefish. PROGRESS FIRST HALF: 50% completed. Behind schedule because of man-power shortage.				X-	--	-X												
A	Prepare catch/effort data for analysis (research survey, commercial and recreational) on butterfish and scup. PROGRESS FIRST HALF: Completed on schedule.		X-	--	-X														

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-005-76-RF-A-1(06)

—NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
5	A	Prepare catch/effort data for analysis (research survey, commercial and recreational) on weakfish and bluefish. PROGRESS FIRST HALF: 50% on schedule - Behind schedule because man-hour shortage.				X	----	X												
7	A	Estimate population parameters (age composition growth, mortalities, recruitment, population size and others) of butterfish and scup. PROGRESS FIRST HALF: Completed on schedule.				X	----	X												
8	A	Estimate population parameters (age composition, growth, mortalities, recruitment, population size and others) of weakfish and bluefish. PROGRESS FIRST HALF: Work in progress but behind schedule because of man-hour shortage.							X	---	X									
	A	Develop yield analysis for implementing appropriate fisheries management strategies for butterfish and scup. PROGRESS FIRST HALF: Completed on schedule.						X	----	----	X									
0	A	Develop yield analysis for implementing appropriate fisheries management strategies for weakfish and bluefish. PROGRESS FIRST HALF: N/A										X	----	----	X					

AA FORM 32-15B
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-005-76-RF-A-1(06)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Prepare manuscript drafts appropriate for publication on butterfish and scup.							X	---	X									
	PROGRESS FIRST HALF: Completed on schedule. Submitted butterfish paper as ICNAF Res. Doc. Series for ICNAF Stock Assessment Subcommittee at Halifax, Canada. Will submit scup paper for ICNAF Annual Meeting for 1976.																		
A	Prepare manuscript drafts appropriate for publication on weakfish and bluefish.										X	---	---	X					
	PROGRESS FIRST HALF: N/A																		
E	Complete Ms. for publication on butterfish and scup.										X	---	---	---	---	---	X		
	PROGRESS FIRST HALF: N/A																		
E	Complete Ms. for publication on weakfish and bluefish.														X	---	---	---	---
	PROGRESS FIRST HALF: N/A																		
A	Continue update analysis for selected species stock assessment of butterfish and scup.										X	---	---	---	---	---	---	---	---
	PROGRESS FIRST HALF: N/A																		

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX

MAC-005-76-RF-A-1(06)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18-month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Continue update analysis for selected species stock assessment of weakfish and bluefish. PROGRESS FIRST HALF: N/A														X	-	-	-	-

DAA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-005-76-RF-A-1	3A(3)	10/25/74

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
88F9P4	FB6200	Sandy Hook Laboratory - 162	MAC-002-75-S2-A-1(05)

). SUBTASK SUFFIX	11. TASK TITLE
07	Fishery Analysis - Middle Atlantic Sportfish

. NUMBER OF STP'S	12. SUBTASK TITLE
8	Biometric Service

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Resource Assessment Investigations
. TOTAL FUNDS	B. END DATE: N/A	
. SOURCE: NMFS	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
. MAN YEARS: 5	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

. SPECIES: Multispecies	19. LIFE STAGE(S): All stages
. WORK LOCATION: Sandy Hook, N. J.	21. PERCENT RECREATIONAL: 50%

. KEY WORDS

Biometry, Statistics, Correlation, Sampling, Experimental Design, Fishery Analysis

. SUBTASK OBJECTIVES AND METHODOLOGY

Provide technical assistance for reviewing, appraising and testing fishery-related data with use of appropriate statistical techniques. Develop estimates of reliability correlation coefficients, variances and other parameters of biological populations.

OFFICIAL PREPARING REPORT *(Signature)*
Harry J. Christensen for
Arthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann
Carl J. Sindermann

-30-

AA FORM 32-15B
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX
MAC-005-76-RF-A-1(07

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Assist and update analyses for shellfish, finfish, benthos, resources inventories and other laboratory tasks.	X																	
	PROGRESS FIRST HALF: Surf clam stock assessment analysis on schedule. Population dynamics work (Oxford) heavy metal analysis (Milford) and mutagenesis (Milford) work is complete.																		
A	Review in-house manuscript report of statistical treatments of research results for appropriateness of interpretation.	X																	
	PROGRESS FIRST HALF: On schedule. Reviewed surf clam population study, heavy metal analysis, mutagenesis analysis, and others.																		

AA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP..
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER: AC-005-76-RF-A-1		4. SUB-OBJECTIVE CODE: 3A(3)	5. PRIOR DATE: New STP
TASK NUMBER: F9P4	7. ORGANIZATION CODE: FB6200	8. FACILITY: Sandy Hook Laboratory - 162	9. PRIOR TDP NO. PLUS STP SUFFIX:
. SUBTASK SUFFIX: 08	11. TASK TITLE: Fishery Analysis - Middle Atlantic Sportfish		
NUMBER OF STP'S: 8	12. SUBTASK TITLE: Data Management		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Resource Assessment Investigations
TOTAL FUNDS	B. END DATE: N/A	
SOURCE: NMFS	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
MAN YEARS: .6	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

SPECIES: Multispecies	19. LIFE STAGE(S): All Stages
WORK LOCATION: Sandy Hook, N. J.	21. PERCENT RECREATIONAL: 50%

KEY WORDS
omputer, Systems, SELGEM, Programming, Information Storage-Retrieval

SUBTASK OBJECTIVES AND METHODOLOGY
rovide service and management of data storage, retrieval and manipulation necessary or fishery and environmental management recommendations and decisions. Develop a unctional computer programming system.

OFFICIAL PREPARING REPORT *(Signature)*
Arthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-005-76-RF-A-1 (08)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Construct and maintain MACFC data bank.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PROGRESS FIRST HALF: On schedule. Updating present system and implementing SELGEM system.																		
A	Interface with scientists to expedite computerization of data and analysis.							X-	-	-	-	-	-	-	-	-	-	-	-
	PROGRESS FIRST HALF: On schedule. Interfaced with National Fish Disease Registery. Incorporated mutagenesis data, heavy metal data.																		
A	Write retrieval programs for collating and analyzing scientific data.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PROGRESS FIRST HALF: On schedule. Biometric resources assessment programs are available for general usage.																		
A	Establish library of users guides to available resource assessment programs.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PROGRESS FIRST HALF: On schedule. Biometric resources as assessment program library is available for general usage.																		

OAA FORM 32-15A
(-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

. TDP NUMBER: MAC-053-76-LS-A-1		4. SUB-OBJECTIVE CODE: 1A(2)	5. PRIOR DATE: 10/25/74
. TASK NUMBER: 88A2P2	7. ORGANIZATION CODE: FB6200	8. FACILITY: Sandy Hook Laboratory - 162	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-053-75-LS-A-1(01)
0. SUBTASK SUFFIX: 01	11. TASK TITLE: Resource Assessment - Ichthyoplankton of the Middle Atlantic Bight		
1. NUMBER OF STP'S: 3	12. SUBTASK TITLE: Distribution and Abundance of Prerecruits		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Resource Assessment Investigations
. TOTAL FUNDS: N/A	B. END DATE: N/A	
. SOURCE: NMFS	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
. MAN YEARS: 4.8	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A
. SPECIES: Multispecies: larval fish		19. LIFE STAGE(S): Larval, Juvenile
0. WORK LOCATION: Middle Atlantic Bight		21. PERCENT RECREATIONAL: 50%

2. KEY WORDS
Distribution of larval fish
Larval fish abundance and fluctuations

. SUBTASK OBJECTIVES AND METHODOLOGY

Sort and identify larval and juvenile fishes from spring survey. Compile and provide distribution and relative abundance on larvae and juveniles from spring cruise to user groups. With coastal finfish assessment task, plan and conduct fall survey cruise in Middle Atlantic Bight to collect larval and juvenile fishes. Sort and identify larval and juvenile fishes from fall survey. Compile and provide distribution and relative abundance data on larval and juvenile collections from fall cruise to user groups. With coastal finfish assessment task, plan and conduct spring survey cruise in Middle Atlantic Bight to collect larval & juvenile fishes. Begin sort of young fishes from spring survey

24. OFFICIAL PREPARING REPORT *(Signature)*: Harold A. Christensen for Arthur S. Merrill	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*: Carl J. Sindermann

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-053-76-LS-A-1(01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Sort and identify ichthyoplankton from spring (FY 75) cruise.	X	-	-	-	-	X												
	PROGRESS FIRST HALF: Completed on schedule. Sorted and identified larval fish from 46 plankton samples and 165 neuston samples collected in Middle Atlantic Bight in March 1975.																		
A	Compile and provide spring (FY 75) cruise data to user groups.				X	-	-	X											
	PROGRESS FIRST HALF: Completed on schedule. Plankton and neuston data (211 samples) from spring (FY 75) cruise submitted to Director, RAI, 1/21/76.																		
A	Plan and conduct fall (FY 76) survey cruise.			X	-	X													
	PROGRESS FIRST HALF: Completed on schedule. Cruise conducted Oct. 15 to Nov. 7, 1975. Occupied 83 plankton stations and 190 neuston stations.																		
A	Sort and identify ichthyoplankton from fall (FY 76) cruise.					X	-	-	-	-	-	-	X						
	PROGRESS FIRST HALF: Ahead of schedule. Sorting and identification of 83 plankton stations and 190 neuston stations completed March 1976.																		
A	Compile and provide fall cruise data to user groups.										X	-	-	X					
	PROGRESS FIRST HALF: Ahead of schedule. Compilation of data from fall cruise underway March 1976.																		

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-053-76-LS-A-1(01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Plan and conduct spring (FY 76) survey cruise.										X-	X							
	PROGRESS FIRST HALF: Cruise ahead of schedule. Conducted March 3 to 24, 1976.																		
A	Sort and identify ichthyoplankton from spring cruise.											X-	-	-	-	-	-X		
	PROGRESS FIRST HALF: N/A																		

OAA FORM 32-15A
(1-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

. TDP NUMBER: MAC-053-76-LS-A-1		4. SUB-OBJECTIVE CODE: 1A(2)	5. PRIOR DATE: 10/25/74
. TASK NUMBER: 88A2P2	7. ORGANIZATION CODE: FB6200	8. FACILITY: Sandy Hook Laboratory - 162	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-053-75-LS-A-1(02)
0. SUBTASK SUFFIX: 02	11. TASK TITLE: Resource Assessment - Ichthyoplankton of the Middle Atlantic Bight		
1. NUMBER OF STP'S: 3	12. SUBTASK TITLE: Diurnal Activities of Young Fishes - Field Work		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Resource Assessment Investigations
. TOTAL FUNDS: N/A	B. END DATE: N/A	
. SOURCE: NMFS	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
. MAN YEARS: .3	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

8. SPECIES: Multispecies: larval fish	19. LIFE STAGE(S): Larval, Juvenile
0. WORK LOCATION: Middle Atlantic Bight	21. PERCENT RECREATIONAL: 50%

. KEY WORDS
Diurnal movements of larval fish. Larval fish Distribution. Year class success
Larval fish transport. Environmental correlation.
Larval silver hake, summer flounder.

. SUBTASK OBJECTIVES AND METHODOLOGY
Plan and conduct summer cruise in Middle Atlantic Bight to study diurnal activities of young silver hake and other associated species. Prepare cruise report. Plan and conduct fall cruise in Middle Atlantic Bight to study diurnal activities of young summer flounder and other associated species. Prepare cruise report.
Note: Sorting, identification, analysis of data and report of diurnal movements of larval fish will be completed through AEC-BNL contract.

. OFFICIAL PREPARING REPORT *(Signature)*: Sheryl J. Christensen for Arthur S. Merrill	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*: Carl J. Sindermann Carl J. Sindermann

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX
MAC-053-76-LS-A-1(02)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Plan and conduct summer cruise. →	X	X																
	PROGRESS FIRST HALF: Completed on schedule. Conducted 72-h study of diel movements of silver hake larvae July 1975.																		
A	Prepare cruise report.			X															
	PROGRESS FIRST HALF: Cruise report completed on schedule.																		
A	Plan and conduct fall cruise.				X	X													
	PROGRESS FIRST HALF: Completed on schedule. Conducted 72-h study of larval summer flounder Nov. 13 to 18, 1975.																		
A	Prepare cruise report.						X												
	PROGRESS FIRST HALF: Cruise report delayed by need to redraft figure. Completed January 1976.																		

AA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
AC-053-76-LS-A-1	1A(2)	10/25/74

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
B8A2P2	FB6200	Sandy Hook Laboratory - 162	MAC-053-75-S1-A-1(03)

. SUBTASK SUFFIX: 03

11. TASK TITLE: Resource Assessment - Ichthyoplankton of the Middle Atlantic Bight

. NUMBER OF STP'S: 3

12. SUBTASK TITLE: Analysis and Preparation of In-House Data for Publication

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Resource Assessment Investigations
. TOTAL FUNDS: N/A	B. END DATE: N/A	
. SOURCE: NMFS	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
MAN YEARS: 3.1	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

. SPECIES: ultispecies: larval fishes

19. LIFE STAGE(S): Egg, Larval and Juvenile

. WORK LOCATION: iddle and South Atlantic Bight

21. PERCENT RECREATIONAL: 40%

. KEY WORDS

awning Grounds
escription
Distribution
Abundance
Young fish

. SUBTASK OBJECTIVES AND METHODOLOGY

mplete revision of manuscripts on distribution and abundance of young stages of Atlantic ckerel and bluefish. Complete revision of manuscripts on description and occurrence young stages of searobins and eels. Complete manuscript describing two sympatric ecies of Merluccius, and larval development of tilefish. Work actively on manuscripts scribing seasonal distribution and abundance of: cod, pollock, haddock; members of milies Scombridae; Sciaenidae; Clupidae; Myctophidae.

OFFICIAL PREPARING REPORT *(Signature)*
Harry J. Christensen for
rthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann
Carl J. Sindermann

DAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX
MAC-053-76-LS-A-1 (03)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Complete revision of Ms.'s on distribution and abundance of:																		
	a) Young bluefish →	X-	-	-	-	-	X												
	PROGRESS FIRST HALF: Completed ahead of schedule. Ms submitted for review Dec. 1975.																		
	b) Young mackerel →	X-	-	-	-	-	X												
	PROGRESS FIRST HALF: On schedule. Ms submitted for review Jan. 1976. Forwarded to Center Editor March 1976.																		
A	Complete revision of Ms.'s on description and occurrence of:																		
	a) Young searobins →	X-	-	-	-	-	X												
	PROGRESS FIRST HALF: On schedule. Ms. completed Dec. 1975. Submitted for review Jan. 1976.																		
	b) Eels →	X-	-	-	-	-	X												
	PROGRESS FIRST HALF: Completed ahead of schedule. Revisions completed Nov. 1975. Submitted to Journal Jan. 1976.																		
A	Complete Ms. describing:																		
	a) Young hakes of genus Merluccius →	X-	-	-	-	-	-	-	-	-	-	-	X						
	PROGRESS FIRST HALF: Behind schedule because of need to reevaluate criteria used to separate two species.																		
	b) Tilefish →	X-	-	-	-	-	-	-	-	-	-	-	X						
	PROGRESS FIRST HALF: Behind schedule. Researchers diverted to other work.																		

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX
MAC-053-76-LS-A-1(03)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Work actively on Ms. describing seasonal distribution and abundance of: a) cod, pollock, haddock →	X	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	X
	PROGRESS FIRST HALF: ADP work complete. Analysis indicates that data are insufficient for publication. Active work on Ms terminated March 1976.																		
	b) members of family Scombirdae →	X	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	X
	PROGRESS FIRST HALF: On schedule. Data submitted to ADP. ADP print outs received. Data being analyzed.																		
	c) members of family Sciaenidae →	X	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	X
	PROGRESS FIRST HALF: On schedule. Data submitted to ADP. ADP print outs received. Data being analyzed.																		
	d) members of family Clupeidae →	X	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	X
	PROGRESS FIRST HALF: On schedule. ADP completed. Analysis completed. Ms being drafted.																		
	e) members of family Myctophidae						X	----	----	----	----	----	----	----	----	----	----	----	→
	PROGRESS FIRST HALF: On schedule. Larval identifications, counts and measurements completed. ADP completed.																		

OAA FORM 32-:5A
1-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

. TDP NUMBER: MAC-055-76-IE-R-1		4. SUB-OBJECTIVE CODE: IV-A-3	5. PRIOR DATE: 10/25/74
. TASK NUMBER: 871217	7. ORGANIZATION CODE: FB6200	8. FACILITY: Sandy Hook Laboratory - 162	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-055-75-IE-R-1(11)
). SUBTASK SUFFIX: (11)	11. TASK TITLE: MESA - New York Bight: Biological Oceanography		
. NUMBER OF STP'S: 11	12. SUBTASK TITLE: Analysis of Groundfish Samples for MESA Objectives		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Resource Assessment Investigations
. TOTAL FUNDS	B. END DATE	
. SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
. MAN YEARS: .5	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

. SPECIES: ultispecies	19. LIFE STAGE(S): Juvenile - Adult
. WORK LOCATION: ew York Bight	21. PERCENT RECREATIONAL: 50%

. KEY WORDS

ESA, Species composition, . Relative abundance
roundfish, Disease incidence

. SUBTASK OBJECTIVES AND METHODOLOGY

rovide a platform for observing, collecting and preparing pathological groundfish and nvertebrate specimens for laboratory analysis. Analyze samples from all groundfish ruises and determine difference in composition and relative abundance of species taken MESA impact areas. Complete fish distribution Ms. Provide trimester report material. omplete special reports as requested for MESA.

OFFICIAL PREPARING REPORT *(Signature)* Harry A. Christensen for Arthur S. Merrill	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)* Carl J. Sindermann Carl J. Sindermann

DAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-055-76-IE-R-1(11)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Collect and distribute pathological samples. PROGRESS FIRST HALF: Pathological specimens collected and distributed on schedule.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	Analyze groundfish samples for MESA-related objectives. PROGRESS FIRST HALF: Groundfish sample analysis on schedule; results indicate some new survey work desirable.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	Prepare trimester report to MESA. PROGRESS FIRST HALF: Trimester report data supplied to coordinator on schedule.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	Ms: Fish distribution NYB-MESA monograph. PROGRESS FIRST HALF: MESA monograph delayed due to higher priority assignments.	X-	-	-	-	-	-	-	-	-	X								
A	Complete special reports for MESA. PROGRESS FIRST HALF: Seven special reports completed and submitted to MESA for publication on schedule.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NOAA FORM 32-15A
(4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/76

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-060-76-RF-A-1	3A(3)	10/25/74

6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
88F9P1	FB6200	Sandy Hook Laboratory - 162	MAC-002-75-S2-A-1(04)

10. SUBTASK SUFFIX	11. TASK TITLE
01	Biological Assessment; Sportfish

13. NUMBER OF STP'S	12. SUBTASK TITLE
5	Historical Cruise Data - 18 Cruises (1968-1972) Between Florida and New York

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Resource Assessment Investigations
B. TOTAL FUNDS	B. END DATE: N/A	
C. SOURCE: NMFS	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
D. MAN YEARS: 1.0	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

18. SPECIES	19. LIFE STAGE(S)
Multispecies; Demersal Finfishes	Adult

20. WORK LOCATION	21. PERCENT RECREATIONAL
U. S. Atlantic Coast - Mass. to Florida	50%

22. KEY WORDS
Benthic Finfishes
Species Association Indices

23. SUBTASK OBJECTIVES AND METHODOLOGY
Begin indepth statistical analysis of coastal trawl data collected during 1968-1972 from New York to Florida with special emphasis on total catch recurrent group analysis in the South Atlantic and inshore Middle Atlantic Bight areas. In addition, distribution and abundance data will be analyzed for selected species.

24. OFFICIAL PREPARING REPORT *(Signature)*
Harry L. Christensen for
Arthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-060-76-RF-A-1(01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Complete feasibility studies of the application of recurrent group analysis to southern inshore-offshore and N. Y. to Va. historical cruise data. PROGRESS FIRST HALF: Behind schedule. Due to other ADP priorities this analysis was held in abeyance.	X-	-	-	-	-	X												
A	Begin recurrent group analysis. PROGRESS FIRST HALF: Behind schedule. Due to other ADP priorities this analysis was held in abeyance.							X-	-	-	-	-	-	-	-	X			
A	Begin distribution and abundance studies pertinent to sea basses (Serranids) occurring in waters from North Carolina to Florida. PROGRESS FIRST HALF: On schedule. Materials are being retrieved from historical cruise data at present.									X-	-	-	-	-	-	-	-	-	X->

IAA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
'O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-060-76-RF-A-1	3A(3)	10/25/74

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
38F9P1	FB6200	Sandy Hook Laboratory - 162	MAC-002-75-S2-A-1(08)

. SUBTASK SUFFIX	11. TASK TITLE
02	Biological Assessment; Sportfish

. NUMBER OF STP'S	12. SUBTASK TITLE
5	Historical and Ongoing Assessment of the Family Sciaenidae (Drum Fishes)

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)* N/A	A. NAME: Resource Assessment Investigations
. TOTAL FUNDS	B. END DATE N/A	
SOURCE: NMFS	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
MAN YEARS: 2.5	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A

. SPECIES	19. LIFE STAGE(S)
eakfish, Spot, Atlantic croaker orthern kingfish, Southern kingfish	Adult

. WORK LOCATION	21. PERCENT RECREATIONAL
. S. Atlantic Coast	80%

KEY WORDS
ciaenidae — Age & Growth
ecundity — Stock Identification

SUBTASK OBJECTIVES AND METHODOLOGY

ontinue age and growth studies based on scales by mounting, reading, and analyzing ollected materials for selected sciaenid species. In addition, continue fecundity nd unit stock identification of selected sciaenid species.

OFFICIAL PREPARING REPORT *(Signature)*
Daniel J. Christensen for
Arthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann
Carl J. Sindermann

DAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-060-76-RF-A-1(02)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Complete age reading of all spot scales.	X	-	-	-	-	X												
	PROGRESS FIRST HALF: On schedule. Approximately 7,000 specimens have been sampled and their scales mounted, read and recorded on appropriate ADP formats.																		
A	Complete age and growth analysis of spot, and prepare rough draft of Ms.							X	-	-	-	-	-	-	-	X			
	PROGRESS FIRST HALF: On schedule. At present data is being incorporated into ADP analysis and sorting systems.																		
A	Begin age reading of weakfish scales.										X	-	-	-	-	-	-	-	-
	PROGRESS FIRST HALF: Not scheduled during first 3/4 of year.																		
A	Complete discriminant function analysis of spot morphometric and meristic data.	X	-	-	-	-	X												
	PROGRESS FIRST HALF: On schedule. Analysis indicates 90% separation of northern and southern unit stocks with 21 variates and 85% with four variates.																		
A	Prepare rough draft of spot discriminant function analysis Ms.							X	-	-	-	-	X						
	PROGRESS FIRST HALF: On schedule. Draft of Ms in preparation.																		

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-060-76-RF-A-1(02)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
E	Complete Atlantic croaker fecundity Ms. and submit for review, revision, and publication. PROGRESS FIRST HALF: On schedule. Ms submitted for review.	X	-	-	-	-	X												
A	Complete spot fecundity study and prepare rough draft of Ms. PROGRESS FIRST HALF: On schedule. Samples have been collected during groundfish surveys and are now being prepared for analysis.				X	-	-	-	-	-	-	-	-	-	-	X			

AA FORM 32-15A
74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

1. FISCAL YEAR
1976

NMFS SUBTASK PLAN

(See Detailed Instructions)

2. DATE PREPARED
08/25/75

(Submit four copies.)
O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
AC-060-76-RF-A-1	3A(3)	10/25/74

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
8F9P1	FB6200	Sandy Hook Laboratory - 162	MAC-002-75-S2-A-1(06)

SUBTASK SUFFIX	11. TASK TITLE
3	Biological Assessment; Sportfish
NUMBER OF STP'S	12. SUBTASK TITLE
	Historical and Ongoing Assessment of the Genus Paralichthys

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS	A. START DATE *(Estimated/Firm)* N/A	A. NAME Resource Assessment Investigations
TOTAL FUNDS	B. END DATE N/A	
SOURCE MFS	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
MAN YEARS 1.0	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A

SPECIES		19. LIFE STAGE(S)
ummer flounder	Southern flounder	Adult
road flounder	Gulf flounder	

WORK LOCATION	21. PERCENT RECREATIONAL
iddle & South Atlantic Coast	40%

KEY WORDS
lounders — Field key
nit stock identification — Discriminant function analysis

SUBTASK OBJECTIVES AND METHODOLOGY

omplete selection of variates and discriminant function analysis (DFA) of morphometric easurements and meristic counts needed to identify unit stocks of the summer flounder . dentatus) occurring from N. Y. to Florida. In addition, using the same techniques FA), prepare field keys to distinguish the summer, souther, Gulf, and broad flounder.

OFFICIAL PREPARING REPORT *(Signature)*
Harry L. Christensen
rthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Earl J. Sindermann
Earl J. Sindermann

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-060-76-RF-A-1(03)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Complete discriminant function analysis pertinent to summer flounder.	X	--	--	--	--	X												
	PROGRESS FIRST HALF: On schedule. Analysis completed for 10 geographically separate samples representing approximately 12,000 individual specimens.																		
A	Complete identification of unit stocks of summer flounder.							X	--	--	X								
	PROGRESS FIRST HALF: On schedule. Northern and southern unit stocks of summer flounder have been defined with a greater than 95% spearation factor achieved using 10 variates.																		
A	Prepare draft of Ms. describing summer flounder unit stocks.										X	--	--	--	--	X			
	PROGRESS FIRST HALF: Not scheduled to begin until fourth quarter FY 76.																		
A	Complete discriminant function analysis pertinent to Gulf, southern, broad, and summer flounders.							X	--	--	--	--	X						
	PROGRESS FIRST HALF: On schedule. Preliminary analysis has begun.																		
A	Prepare draft of key to Gulf, southern, broad, and summer flounder diagnostic characteristics.													X	--	X			
	PROGRESS FIRST HALF: Not scheduled until 1st quarter FY 77.																		

)AA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-060-76-RF-A-1	3A(3)	10/25/74

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
38F9P1	FB6200	Sandy Hook Laboratory - 162	MAC-002-75-S2-A-1(10)

). SUBTASK SUFFIX	11. TASK TITLE
04	Biological Assessment; Sportfish
. NUMBER OF STP'S	12. SUBTASK TITLE
5	Life History Aspects of Finfishes Found in the New York Bight

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)* N/A	A. NAME: Resource Assessment Investigations
. TOTAL FUNDS	B. END DATE N/A	
. SOURCE: NMFS	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
. MAN YEARS: 4.2	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A

. SPECIES: Multispecies; demersal finfishes	19. LIFE STAGE(S): Adult
. WORK LOCATION: "New York Bight"	21. PERCENT RECREATIONAL: 80%

. KEY WORDS

Benthic finfishes — Life History — Biostatistics
Species diversity

. SUBTASK OBJECTIVES AND METHODOLOGY

Collect samples of all finfishes captured during bi-monthly groundfish cruises in the "N. Y. Bight" and associated estuaries. Provide species diversity, length-weight, condition coefficient, sex ratio, gonadal development, and distribution data for selected species found in the "N. Y. Bight" with emphasis on the sportfish element. Prepare FY 76 semi-annual and annual reports.

OFFICIAL PREPARING REPORT *(Signature)*
Arthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX

MAC-060-76-RF-A-1(04)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Complete samples during bi-monthly assessment cruises.	X-	-	-	-	-	-	-	-	-	-	-	-X						
	PROGRESS FIRST HALF: On schedule. Samples totaling approximately 20,000 specimens representing 21 species have been collected during first 3/4 FY 76.																		
A	Determine species diversity and process samples for selected life history aspects.			X-	-	-	-	-	-	-	-	-	-	-	X				
	PROGRESS FIRST HALF: On schedule. To date approximately 15,000 specimens have been worked up.																		
A	Prepare FY 76 semi-annual summary report of findings.						X-	-	-X					X-	-	-X			
	PROGRESS FIRST HALF: On schedule. Semi-annual report prepared and submitted to Director, RAI. Report summarizes the data from 11,520 specimens.																		
A	Prepare rough draft of Ms. describing weight-length relationships of 96 species of finfish collected during FY 1975 monthly surveys.	X-	-	-	-	-	-	-	-	-	-	-	-X						
	PROGRESS FIRST HALF: On schedule. A ms "Weight-length relationships of fishes collected in the New York Bight" has been prepared and submitted for review.																		

AA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
AC-060-76-RF-A-1	3A(3)	New STP

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
3F9P1	FB6200	Sandy Hook Laboratory - 162	

. SUBTASK SUFFIX	11. TASK TITLE
5	Biological Assessment; Sportfish

. NUMBER OF STP'S	12. SUBTASK TITLE
	Age Determination of Selected Finfish

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)* N/A	A. NAME: Resource Assessment Investigations
. TOTAL FUNDS	B. END DATE N/A	
. SOURCE: MFS	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
. MAN YEARS: .5	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A

. SPECIES	19. LIFE STAGE(S)
ultispecies; Atlantic Coast Finfish	Adult

. WORK LOCATION	21. PERCENT RECREATIONAL
S. Atlantic Coast	75%

. KEY WORDS

ge determination Assessment models

. SUBTASK OBJECTIVES AND METHODOLOGY

egin to collect, prepare, and age selected species (scup, bluefish, summer flounder, eakfish, and butterfish) by means of scales and/or otoliths to provide age-length ata needed to construct assessment models.

OFFICIAL PREPARING REPORT *(Signature)*	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
James F. Christensen for Arthur S. Merrill	Carl J. Sindermann Carl J. Sindermann

AA FORM 32-15B
74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-060-76-RF-A-1(05)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Collect, prepare and read weakfish scales (approx. 100-200) and provide tabulated data to statistical group for use in assessment models.	X-	-	-	-	-	-	-	-	-	-	-	-X						
	PROGRESS FIRST HALF: On schedule. 217 weakfish scale samples have been collected and prepared for age determinations.																		
A	Collect, prepare and read scup scales (approx. 100-200) and provide tabulated data to statistical group for use in assessment models.	X-	-	-	-	-	-	-	-	-	-	-	-X						
	PROGRESS FIRST HALF: On schedule. 574 scup scale samples have been collected and a size stratified subsample prepared for age determination.																		
A	Collect, prepare and read summer flounder otoliths (approx. 100-200) and provide tabulated data to statistical group for use in assessment models.	X-	-	-	-	-	-	-	-	-	-	-	-X						
	PROGRESS FIRST HALF: On schedule. 100 summer flounder otoliths have been collected and sent to NEFC for age determination.																		
A	Collect, prepare and read butterfish scales and/or otoliths (approx. 100-200) and provide tabulated data to statistical group for use in assessment models.	X-	-	-	-	-	-	-	-	-	-	-	-X						
	PROGRESS FIRST HALF: On schedule. 337 butterfish otoliths have been collected and sent to NEFC for age determination.																		

AA FORM 32-158
74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX

MAC-060-76-RF-A-1(05)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Collect, prepare and read bluefish scales (approx. 100-200) and provide tabulated data to statistical group for use in assessment models.	X	-	-	-	-	-	-	-	-	-	-	X						

PROGRESS FIRST HALF: On schedule. 237 bluefish scale samples have been collected and prepared for age determination.

AA FORM 32-15A
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER		4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-065-76-IE-R		1A(2)	08/15/74
TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
B8A203	FB6200	Sandy Hook Laboratory - 162	MAC-065-75-IE-R(01)
SUBTASK SUFFIX	11. TASK TITLE		
01	MARMAP: Larval Fish Studies - AEC Reimbursable		
NUMBER OF STP'S	12. SUBTASK TITLE		
3	Ichthyoplankton Survey of New York Bight		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS	A. START DATE *(Estimated/Firm)* 1 July 1975	A. NAME: Resource Assessment Investigations
TOTAL FUNDS	B. END DATE 1 July 1976	
SOURCE: AEC-BNL	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
MAN YEARS: 2.8	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

SPECIES	19. LIFE STAGE(S)
Multi-species	Eggs, Larvae, Juveniles
WORK LOCATION	21. PERCENT RECREATIONAL
New York Bight	40%

KEY WORDS
Ichthyoplankton Distribution, New York Bight

SUBTASK OBJECTIVES AND METHODOLOGY

Serial surveys at 20 grid stations and 5 stations on a transect off Shincock Inlet will be conducted in conjunction with monthly groundfish surveys in New York Bight. Standard 60 cm bongo tows at grid stations, discrete depth tows on transect. Samples sorted on contract, data prepared for report to BNL and publication on importance of nearshore to ichthyoplankton, and its vertical distribution nearshore.

OFFICIAL PREPARING REPORT *(Signature)*	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Darryl A Christensen for Arthur S. Merrill	Carl J. Sindermann Carl J. Sindermann

DAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-065-76-IE-R(01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
	A	Conduct serial ichthyoplankton cruises in New York Bight. PROGRESS FIRST HALF: Completed on schedule. Three planned cruises conducted in July, August, September. Cruises planned for May and June.	X-	-	-	-	-	-	-	-	-	-	-	-X						
	A	Plankton samples sorted on contract. PROGRESS FIRST HALF: On schedule. Sampling contract terminated April 1976.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-X			
	A	Prepare cruise reports. PROGRESS FIRST HALF: On schedule. Cruise results included in 6-mo. reports submitted to ERDA.	X-	-	-	-	-	-	-	-	-	-	-	-	-X					
	A	Identify, count and measure ichthyoplankton. PROGRESS FIRST HALF: Identifications and counts on schedule. Larval measurements behind schedule because technicians diverted to transposing data to ADP forms. Effort being extended to be on schedule by June 1976.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-X	
	A	Analyze plankton data an prepare for reports and publication. PROGRESS FRIST HALF: On schedule. Preliminary results included in 6-mo. report to ERDA. Physical and biological data being prepared for publication.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-X

NOAA FORM 32-15A
(4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-065-76-IE-R	1A(2)	08/15/74

6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
B8A203	FB6200	Sandy Hook Laboratory - 162	MAC-065-75-IE-R(02)

10. SUBTASK SUFFIX	11. TASK TITLE
02	MARMAP: Larval Fish Studies - AEC Reimbursable

1. NUMBER OF STP'S	12. SUBTASK TITLE
3	Atlas of Ichthyoplankton Data from R/V Dolphin Survey 1965-66

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: 1 July 1975	A. NAME: Resource Assessment Investigations
B. TOTAL FUNDS	B. END DATE: 1 July 1976	
C. SOURCE: AEC-BNL	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
D. MAN YEARS: 1.0	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

18. SPECIES	19. LIFE STAGE(S)
Multi-species	Eggs, Larvae

20. WORK LOCATION	21. PERCENT RECREATIONAL
Middle Atlantic Bight	50%

22. KEY WORDS
Ichthyoplankton distribution with season, depth, and hydrographic data.

23. SUBTASK OBJECTIVES AND METHODOLOGY
Ichthyoplankton from R/V Dolphin survey of Middle Atlantic Bight has been identified, counted and measured. All data has been accessed to an ADP system. A machine-produced atlas will be prepared listing occurrences of all species at each station with associated hydrographic and collection data. Atlas will be published as a NOAA SSR Report.

24. OFFICIAL PREPARING REPORT *(Signature)*
Henry J. Christensen for
Arthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann
Carl J. Sindermann

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-065-76-IE-R (02)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
.	A	Produce machine generated listing of ichthyoplankton data. PROGRESS FIRST HALF: Listing completed. Data ready for Ms.	X-	--	--	X														
2	A	Prepare atlas for review and publication. PROGRESS FIRST HALF: Progress ahead of schedule. Narrative completed. Ms ready for review March 1976.	X-	--	--	--	--	--	--	--	--	-X								
3	A	Submit atlas for publication. PROGRESS FIRST HALF: On schedule. Progress ahead of schedule. Narrative completed. Ms ready for review March 1976.	X-	--	--	--	--	--	--	--	--	--	--	-X						

OAA FORM 32-15A
4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

. TDP NUMBER: MAC-065-76-IE-R		4. SUB-OBJECTIVE CODE: 1A(2)	5. PRIOR DATE: 08/15/74
. TASK NUMBER: B8A203	7. ORGANIZATION CODE: FB6200	8. FACILITY: Sandy Hook Laboratory - 162	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-065-IE-R(03)
0. SUBTASK SUFFIX: 03	11. TASK TITLE: MARMAP: Larval Fish Studies - AEC Reimbursable		
. NUMBER OF STP'S: 3	12. SUBTASK TITLE: Diurnal Activities of Young Fishes - Lab Work		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: 1 July 1975	A. NAME: Resource Assessment Investigations
. TOTAL FUNDS	B. END DATE: 1 July 1976	
. SOURCE: AEC-BNL	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
. MAN YEARS: 2.2	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

. SPECIES: Atlantic mackerel, yellowtail flounder, bluefish	19. LIFE STAGE(S): Egg, Larvae
. WORK LOCATION: Middle Atlantic Bight	21. PERCENT RECREATIONAL: 75%

. KEY WORDS
Relation of vertical distribution of fish larvae to time of day, hydrography, and other environmental parameters.

. SUBTASK OBJECTIVES AND METHODOLOGY
Complete analysis of data and preparation of manuscript pertaining to diurnal vertical movements of yellowtail flounder, Atlantic mackerel larvae and bluefish. Sort and begin identifying, counting and measuring larvae from summer (FY 76) diurnal activities cruise concentrating on silver hake larvae. Sort and begin identifying, counting and measuring larvae from fall (FY 76) diurnal activities cruise concentrating on summer flounder larvae.

OFFICIAL PREPARING REPORT *(Signature)*: Harry A. Christensen for Arthur S. Merrill	26. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*: Carl J. Sindermann Carl J. Sindermann

AA FORM 32-15B
74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-065-76-IE-R(03)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Complete for publication manuscripts on diurnal activities of larval: a) Yellowtail flounder	X	-	-	-	-	X												
	PROGRESS FIRST HALF: Behind schedule due to inclusion of larval feeding habits. Ms completed and submitted for in-house review March 1976.																		
	b) Atlantic mackerel	X	-	-	-	-	-	-	-	-	-	-	X						
	PROGRESS FIRST HALF: On schedule. Data analysis complete; Ms being drafted.																		
	c) Bluefish	X	-	-	-	-	-	-	-	-	-	-	X						
	PROGRESS FIRST HALF: On schedule. ADP work completed. Data analyzed. Ms being drafted.																		
A	Sort plankton samples collected on cruise to study diurnal activities of silver hake larvae.	X	-	-	-	-	X												
	PROGRESS FIRST HALF: Completed sorting eggs and larvae from 96 samples collected on 3-day study.																		
A	Identify, count and measure larval fishes collected during silver hake diurnal activities cruise.			X	-	-	-	-	-	-	-	-	-	-	-	-	X		
	PROGRESS FIRST HALF: Ahead of shcedule. Larval identifications, counts and measurements completed March 1976.																		

A FORM 32-15B
(4)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-065-76-IE-R(03)

UMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Sort plankton samples collected on cruise to study diurnal activities of summer flounder. PROGRESS FIRST HALF: Ahead of schedule, all 96 samples sorted by March 1976.						X	-	-	-	-	-	X						
A	Identify, count and measure larval fishes collected during summer flounder diurnal activities cruise. PROGRESS FIRST HALF: N/A										X	-	-	-	-	-	-	-	X

NOAA FORM 32-15A
(4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-069-76-IE-R-1	6B(2)	New STP

6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
R8C204	FB6200	Sandy Hook Laboratory - 162	

10. SUBTASK SUFFIX	11. TASK TITLE
04	Effects of Dredge Spoil Disposal, New London, Connecticut

11. NUMBER OF STP'S	12. SUBTASK TITLE
4	Groundfish Survey - Block Island Sound (Fishers Island)

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Resource Assessment Investigations
B. TOTAL FUNDS	B. END DATE: N/A	
C. SOURCE	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
D. MAN YEARS: .5	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

18. SPECIES	19. LIFE STAGE(S)
Multispecies; demersal finfish	Juvenile and Adult

20. WORK LOCATION	21. PERCENT RECREATIONAL
Block Island Sound (Fishers Island)	50%

22. KEY WORDS
Groundfish Assessment
Distribution and abundance, species composition

23. SUBTASK OBJECTIVES AND METHODOLOGY

Conduct second groundfish survey (summer) using standard survey techniques. Complete and distribute report of second survey. Complete and submit final report.

24. OFFICIAL PREPARING REPORT *(Signature)*
Cheryl A. Christensen for Arthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann
for -63- Carl J. Sindermann

IAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX

MAC-069-76-IE-R-1(4)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
E	Complete summer groundfish survey. PROGRESS FIRST HALF: Completed on schedule.	X																	
A	Complete preliminary report of second survey. PROGRESS FIRST HALF: Completed on schedule.	X	---	X															
A	Complete final report of first and second survey. PROGRESS FIRST HALF: Completed on schedule. Submitted to Ecosystems Investigation for review.	X	----------	----------	----------	----------	----------	----------	X										

NOAA FORM 32-15A (4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: FY 76

2. DATE PREPARED: August 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-006-76-IE-A-01	IV-A-9	October 1974

6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS SUFFIX
88C2P1	FB6100	Sandy Hook Laboratory	MAC-006-75-IE-A-1

10. SUBTASK SUFFIX	11. TASK TITLE
01	Behavior of Fishes Under Environmental Stress

11. NUMBER OF STP'S	12. SUBTASK TITLE
2	Behavior of Fishes Under Environmental Stress: Field Studies

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Ecosystems Investigations
B. TOTAL FUNDS	B. END DATE	
C. SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. John B. Pearce
D. MAN YEARS	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

18. SPECIES	19. LIFE STAGE(S)
Tautoga onitis; Pseudopleuronectes americanus; Tautogolabrus adspersus	Juveniles

20. WORK LOCATION	21. PERCENT RECREATIONAL
New York Bight	100%

22. KEY WORDS

Food organisms, feeding habits, habitat requirements, temperature, substrate

23. SUBTASK OBJECTIVES AND METHODOLOGY

Determination of feeding habits, habitat requirements, relation to substrate and seasonal patterns of activity of selected inshore juvenile species (cunner, tautog and winter flounder) in our continuing effort to define life habits and understand changing environmental requirements of different life stages of these species.

24. OFFICIAL PREPARING REPORT *(Signature)*

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*

OAA FORM 32-15B
-741

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX

MAC-006-76-IE-A-01

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977				
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
A	Correlation of winter flounder activity, movements, habitat selection and food habits with selected physical parameters; e.g. temperature, current, light, etc.	X																
	PROGRESS FIRST HALF: Held in abeyance because of increased concentration of juvenil tautog and cunner. 0%.																	
	PROGRESS SECOND HALF:																	
A	Comparative assessment of feeding interrelationships between juvenile cunner, tautog and winter flounder as determined by stomach sample analysis.	X																
	PROGRESS FIRST HALF: Delayed by season. 30%. Analysis of stomach contents is in progress with no seasonal trend yet discernible																	
	PROGRESS SECOND HALF:																	
A	Determination of habitat requirements of juvenile cunner, tautog and winter flounder.	X																
	PROGRESS FIRST HALF: Delayed by season. 20%. Habitat requirements for juvenile tautog and cunner appear to be a function of age. Seasonal occurrence of macro-algae beds appear to be significantly involved as nursery areas for juveniles.																	
	PROGRESS SECOND HALF:																	
M	Publication: Activity, movements and feeding behavior of the cunner, Tautogolabrus adspersus and comparison of food habits with young tautog, Tautoga onitis off Long Island, N.Y.				X													
	PROGRESS FIRST HALF: Published. 100%. Olla, B.L., A.J. Bejda and A.D. Martin. 197 Activity, movements and feeding behavior of the cunner, Tautogolabrus adspersus, and comparison of food habits with young tautog, Tautoga onitis, off Long Island, New 1/																	
	PROGRESS SECOND HALF:																	

REMARKS/RESULTS:
1/ York, Fish. Bull., U.S. 73:895-900.

NOAA FORM 32-15A (4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: FY 76

2. DATE PREPARED: August 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-006-76-IE-A-2	IV-A-9	October 1974

6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
88C2P1	FB6100	Sandy Hook Laboratory F161	MAC-006-75-IE-A-1-

10. SUBTASK SUFFIX	11. TASK TITLE
02	Behavior of Fishes Under Environmental Stress

11. NUMBER OF STP'S	12. SUBTASK TITLE
2	Behavior of Fishes Under Environmental Stress: Laboratory Studies

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Ecosystems Investigations
B. TOTAL FUNDS	B. END DATE	
C. SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. John B. Pearce
D. MAN YEARS	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

18. SPECIES	19. LIFE STAGE(S)
Cynoscion regalis; Tautoga onitis Tautogolabrus adspersus; Urophycis chuss	Adult

20. WORK LOCATION	21. PERCENT RECREATIONAL
Sandy Hook Laboratory	100%

22. KEY WORDS

Feeding, activity rhythms, environmental requirements, territoriality, reproduction

23. SUBTASK OBJECTIVES AND METHODOLOGY

Determination of normal activity, feeding and where applicable, social behavior (aggression, temitoriality, reproduction) in adult tautog, weakfish, cunner and hake to be used as a basis for defining environmental requirements and for evaluating the effects of selected stresses on life habits.

24. OFFICIAL PREPARING REPORT *(Signature)*: John B. Pearce

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*: Carl J. Sindermann

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX
MAC-006-76-IE-A-1 (0

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977				
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
A	Normal activity, feeding in adult weakfish.	X	—	—	—	—	—	—	—	—	—	—	X					
	PROGRESS FIRST HALF: This study has been held in abeyance because of increased effort expended on tautog studies. 0%.																	
	PROGRESS SECOND HALF:																	
A	Thermal stress effects on weakfish.												X	—	—	—	—	—
	PROGRESS FIRST HALF: Not scheduled for this reporting period. 0%.																	
	PROGRESS SECOND HALF:																	
A	Normal activity, territoriality, aggression and feeding in adult tautog.	X	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	PROGRESS FIRST HALF: Ahead of schedule. 75%. Replication of this test with a different group of adult tautog is confirming our findings on the activity and social behavior established last year. These behaviors are currently serving as baseline 1/																	
	PROGRESS SECOND HALF:																	
A	Reproductive behavior in adult tautog.	X	—	X							X	—	—	—	—	X		
	PROGRESS FIRST HALF: Ahead of schedule. 60%. Paired spawning in the aquarium continued for a 3-4 month period. This was preceded by heightened levels of aggression between the dominant and subordinate males and courtship activity between the two 2/																	
	PROGRESS SECOND HALF:																	
M	Publication: The Effect of Temperature on the Behavior of young Tautog, Tautoga onitis (L.).											X						
	PROGRESS FIRST HALF: Published. 100%. Olla, B.L., and A.L. Studholme. 1975. 3/																	

REMARKS/RESULTS:
1/ measures for thermal studies. (See STP MAC-061-76-IE-R-1) now in progress.
2/ spawners. Behaviors observed appear to be appropriate measures which can be used in future experiments to evaluate the effects of environmental stress.
3/ The Effect of Temperature on the Behavior of Young Tautog, Tautoga onitis (L.). Proc. 9th Europ. mar. biol. Symp., 75-93.

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-006-76-IE-A-1 (0

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Normal activity, feeding and social interactions of cunner.							X											
	PROGRESS FIRST HALF: Not scheduled for this reporting period. 0%.																		
	PROGRESS SECOND HALF:																		
M	Publication: The Effect of Temperature on the Behavior of Marine Fishes. A Comparison among Atlantic Mackerel, Scomber scombrus, Bluefish, Pomatomus saltatrix, and Tautog, Tautoga onitis.										X								
	PROGRESS FIRST HALF: Published. 100%. Olla, B.L., A.L. Studholme, A.J. Bejda, C. Samet and A.D. Martin. 1975. The Effect of Temperature on the Behavior of Marine Fishes. Proc. IAEA Symp. on Combined Effects of Radioactive, Chemical and 1/																		
	PROGRESS SECOND HALF:																		
A	Normal activity and feeding as related to olfactory stimuli in hake.							X											
	PROGRESS FIRST HALF: Not scheduled for this reporting period. 0%.																		
	PROGRESS SECOND HALF:																		

REMARKS/RESULTS:
1/ Thermal Releases to the Environment. IAEA-SM-197/4: 299-308.

NOAA FORM 32-15A
(4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

1. FISCAL YEAR
FY 76

NMFS SUBTASK PLAN

(See Detailed Instructions)

2. DATE PREPARED
August 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-007-76-EI-A-1	IV-A-9	October 1974

6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS SUFFIX
88C2P2	FB6100	Sandy Hook Laboratory (161)	MAC-007-75-IE-A-1

10. SUBTASK SUFFIX	11. TASK TITLE
01	Impact of Environmental Change, Middle Atlantic

11. NUMBER OF STP'S	12. SUBTASK TITLE
2	Impact of Environmental Change, Raritan Bay and Long Island Sound

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)* N/A	A. NAME Ecosystems Investigations
B. TOTAL FUNDS	B. END DATE N/A	
C. SOURCE	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. John B. Pearce
D. MAN YEARS	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A

18. SPECIES	19. LIFE STAGE(S)
N/A	N/A

20. WORK LOCATION	21. PERCENT RECREATIONAL
Raritan Bay, Long Island Sound	0%

22. KEY WORDS
Benthos, macrofauna, distributions, abundance, associations, seasonality, nutrients, sediments, heavy metals, pollution effects, multivariate analysis, clustering

23. SUBTASK OBJECTIVES AND METHODOLOGY
Baseline sampling of Raritan Bay and Long Island Sound completed. Sample processing continues, to describe distributions, abundance and diversity of benthic fauna, and relations to sediments and contaminants. Reduced-intensity monitoring will determine changes from the baseline characterization. Methodology: annual resampling (macrofauna, water, sediments) of selected stations representing various sediment strata. Regression, multivariate and cluster analyses.

24. OFFICIAL PREPARING REPORT *(Signature)*

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-007-76-EI-A1-(01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
E	Submit final report to EPA on stations surrounding NAD-Earle USEPA Field Testing Station.					X													
	PROGRESS FIRST HALF: Behind schedule - lack of personnel 1/																		
	PROGRESS SECOND HALF:																		
E	Submit report on predredging characteristics of Ambrose Channel macrofauna.				X														
	PROGRESS FIRST HALF: Same as 1 above.																		
	PROGRESS SECOND HALF:																		
	Preparation of data from overall census of Raritan Bay sediments and benthic macrofauna.						X	—	—	—	—	—	X						
	PROGRESS FIRST HALF: Same as 1 above.																		
	PROGRESS SECOND HALF:																		
	2/ Yearly sampling of 2 stations from each of 4 strata throughout RB.												X						
	PROGRESS FIRST HALF: Completed in Jan. '76.																		
	PROGRESS SECOND HALF:																		
A	Prepare manuscript on benthic macrofauna of Long Island Sound.	X	—	—	—	—	—	—	—	—	—	—	—	X					
	PROGRESS FIRST HALF: Behind schedule - now revising Informal Report to submit as NOAA Technical Report on benthic ecology of LIS.																		

REMARKS/RESULTS:
1/ Leader of Raritan Bay project resigned September 1975 - not yet replaced.
2/ Requires additional inhouse funds for sample collection and processing.

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX
MAC-007-76-EI-A-1(01

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
	PROGRESS SECOND HALF:																		
A	Prepare manuscripts for publication describing new species of benthic invertebrates found in investigaion surveys, and range extensions for known species.							X											
	PROGRESS FIRST HALF: Begun on schedule.																		
	PROGRESS SECOND HALF:																		
A	1/ Annual monitoring of 40 selected stations representative of defined strata in Long Island Sound to determine changes from baselines established in 1972-73.			X												X			
	PROGRESS FIRST HALF: Completed on schedule. Resampled 60 stations. Sorting and identification completed for 40 additional samples from this and prior cruises.																		
	PROGRESS SECOND HALF:																		

REMARKS/RESULTS:
1/ Requires additional inhouse funds for sample collection and processing.

NOAA FORM 32-15A (4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: FY 76

2. DATE PREPARED: August 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-007-76-EI-A-1	IV-A-9	October 1974

6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
88C2P2	FB6100	Sandy Hook Laboratory	MAC-007-75-IE-A-1

10. SUBTASK SUFFIX	11. TASK TITLE
02	Impact of Environmental Change, Middle Atlantic

11. NUMBER OF STP'S	12. SUBTASK TITLE
2	Impact of Environmental Change, Deep Water Oil Exploration and Waste Disposal Sites

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Ecosystems Investigations
B. TOTAL FUNDS	B. END DATE: N/A	
C. SOURCE: NMFS	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. John B. Pearce
D. MAN YEARS	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

18. SPECIES	19. LIFE STAGE(S)
N/A	N/A

20. WORK LOCATION	21. PERCENT RECREATIONAL
Middle Atlantic Bight	0%

22. KEY WORDS
Benthos, macrofauna, distribution and abundance, sediments, heavy metal contaminants, petroleum contaminants.

23. SUBTASK OBJECTIVES AND METHODOLOGY
Continue processing of existing macrofauna samples from New Jersey Coast and Baltimore Canyon Trough areas to establish baselines against which impacts of oil related and other activities can be measured. Describe faunal distributions, abundance and diversity, relations to sediment types and topography. Methodology: laboratory sorting and identification of macrofauna samples. Standard procedures for sediment granulometry and constituents. Computerized analysis of animal sediment - contaminant relationships.

24. OFFICIAL PREPARING REPORT *(Signature)*

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*

AA FORM 32-15B
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX
MAC-007-76-EI-A-1(0)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Processing of macrofauna samples from Baltimore Canyon Trough and New Jersey Coast continues on intermittent basis awaiting additional funding.	X																	
	PROGRESS FIRST HALF: Behind schedule.1/ 21% of 114 BCT samples have been sorted to date, and 11% identified. 31% of 326 NJC samples have been sorted and 9% identific																		
	PROGRESS SECOND HALF:																		
E	Inclusion of New Jersey Coast and Baltimore Canyon data in formal publication (MESA Atlas).						X												
	PROGRESS FIRST HALF: Slightly behind schedule. Manuscript now under review.																		
	PROGRESS SECOND HALF:																		
A	Semiannual reports to Center on subtask findings (1 April, 1 October).										X						X		
	PROGRESS FIRST HALF: Not applicable due to inactivity of BLM program. 1/																		
	PROGRESS SECOND HALF:																		
E	Utilization of submersible (Alvin) for in situ observations and experiments in BCT area.											X							
	PROGRESS FIRST HALF: None - Alvin not available for planned experiments at this time.																		
	PROGRESS SECOND HALF:																		

REMARKS/RESULTS:
1/ BLM funding has not yet been received and present planning does not anticipate receiving such funds. Majority of the project's effort has been redirected toward completeion of the MESA Atlas and as of Dec. 75, the Raritan Bay Briefing Book.

DAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX
MAC-007-76-EI-A-1 (0

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Prepare report on baseline benthic ecology of BCT area and shoreward. PROGRESS FIRST HALF: Not yet begun 1/ (as per schedule). PROGRESS SECOND HALF:																X		

REMARKS/RESULTS:
1/BLM funding has not yet been received and present planning does not anticipate receivng such funds. Majority of the project's effort has been redirected toward completion of the MESA Atlas and as of Dec. 75, the Raritan Bay Briefing Book.

NOAA FORM 32-15A
(4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: FY 76

2. DATE PREPARED: August 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each.
Each contract or grant in excess of $2,500 is a separate Subtask.

. TDP NUMBER: MAC-008-76-IE-A-1		4. SUB-OBJECTIVE CODE: IV-A-9	5. PRIOR DATE: N/A
. TASK NUMBER: 88C2P3	7. ORGANIZATION CODE: FB6100	8. FACILITY: Sandy Hook Laboratory 161	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-008-75-IE-A-1(01)
0. SUBTASK SUFFIX: 01	11. TASK TITLE: Biochemical Modeling; Middle Atlantic		
. NUMBER OF STP'S: 2	12. SUBTASK TITLE: Organically Bound Metal Effects on Biochemistry and Physiology of Crustacea		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Ecosystems Investigations
. TOTAL FUNDS	B. END DATE: N/A	
. SOURCE	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. John B. Pearce
. MAN YEARS	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

. SPECIES: Rock crab, American lobster, stone crab, blue crab

19. LIFE STAGE(S): larvae, adults

. WORK LOCATION: Raritan Bay, New York Bight, laboratory

21. PERCENT RECREATIONAL: N/A

. KEY WORDS: Osmoregulation, metabolism, enzymes, ion transport, organically bound metals, chelation, metal adsorption, gills, ATPase, glutamic dehydrogenase

. SUBTASK OBJECTIVES AND METHODOLOGY

To develop data for modeling interactions of heavy metal-organic complexes with sensitive aspects of biochemistry and physiology of organisms. To understand the impact on life cycles of animals of pollutant metals as they actually exist in estuarine and marine environments, whether organically bound, adsorbed on particulates, or in solution. Methods include investigation of biochemical and physiological parameters suspected of being particularly sensitive to environmental influences, such as osmoregulation, respiration, ion transport, and amino and acid metabolism. Specific enzymes assayed include Mg-ATPase, Na^+-K^+-ATPase, and glutamic dehydrogenase. Both

OFFICIAL PREPARING REPORT *(Signature)*: Robert K. Tucker; John B. Pearce	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*: Carl O. Sindermann, Acting Director

23. SUBTASK OBJECTIVES AND METHODOLOGY (cont'd)

in vitro and *in vivo* exposure to metals in their various forms will be carried out, with the Milford, Conn., bioassay facility being used for *in vivo* studies. Data generated will be correlated with and related to other fisheries resources. Species serving as experimental models include actual and potential fisheries resources as well as important forage organisms.

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-008-76-IE-A-1 (01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Characterize crab gill transport systems; test in vitro effects of metals.						X												
	PROGRESS FIRST HALF: Tests with cadmium and lead complete. 100%.																		
	PROGRESS SECOND HALF:																		
A	Investigate metal effects on amino acid metabolism.												X						
	PROGRESS FIRST HALF: Assay and analytical methods worked out. 40%.																		
	PROGRESS SECOND HALF:																		
A	Assay lobster gill ATPase from chronically exposed (Cd) animals.				X														
	PROGRESS FIRST HALF: Assays complete. 100%.																		
	PROGRESS SECOND HALF:																		
A	Test effects of organically bound metals on previously characterized animal systems.				X														
	PROGRESS FIRST HALF: Organically bound metal analysis not started. 0%.																		
	PROGRESS SECOND HALF:																		
E	(M) Manuscript (jointly with Milford group) on in vivo effects of cadmium on lobster.					X													
	PROGRESS FIRST HALF: Manuscript submitted (oral presentation to Physiology Symposiu will be published in volume by Academic Press).																		

REMARKS/RESULTS:
Our assay results indicate that cadmium and lead significantly inhibit gill enzymes of rock crabs, upon in vitro exposure. Slight increases in enzyme activity occur, however, in lobsters subjected to long term in vivo metal exposure, suggesting the possibility of enzyme induction or other adaptive mechanism. Data and discussion of these results is being prepared in several manuscripts, including the one cited in #5 above.

DAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX
MAC-008-76-IE-A-1 (01

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 1977				
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
	PROGRESS SECOND HALF:																	
E	(M) Manuscript on metal effects on amino acid metabolism.															X		
	PROGRESS FIRST HALF: N/A. Due FY77.																	
	PROGRESS SECOND HALF:																	
	REMARKS/RESULTS: 6 IV 76																	

NOAA FORM 32-15A
(4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: FY 76

2. DATE PREPARED: August 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-008-76-IE-A-1	IV-A-9	N/A

6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
88C2P3	FB6100	Sandy Hook Laboratory 161	MAC-008-75-IE-A-1(0

10. SUBTASK SUFFIX	11. TASK TITLE
02	Biochemical Modeling; Middle Atlantic

1. NUMBER OF STP'S	12. SUBTASK TITLE
2	Environmental Forms of Heavy Metals

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Ecosystems Investigations
B. TOTAL FUNDS	B. END DATE: N/A	
C. SOURCE	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. John B. Pearce
D. MAN YEARS	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

18. SPECIES	19. LIFE STAGE(S)
N/A	N/A

20. WORK LOCATION	21. PERCENT RECREATIONAL
Raritan Bay, New York Bight, laboratory	N/A

22. KEY WORDS
Cadmium, lead, zinc, copper, polarography, ligand binding, chelation, heavy metals

23. SUBTASK OBJECTIVES AND METHODOLOGY
To determine concentrations and actual forms (solubility, chemical form, organic binding, particulate adsorption, etc.) of pollutant heavy metals in estuarine and marine waters so that effects of these materials on the physiology and biochemistry of fishery resource organisms may be modeled. Methods include pulsed anodic polarography, liquid and gas chromatography, equilibrium dialysis and standard chemical analysis.

24. OFFICIAL PREPARING REPORT *(Signature)*: John B. Pearce

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*: [illegible]

NOAA FORM 32-15B (4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX: MAC-008-76-IE-A-1 (02)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
1	A	Polarographic analysis of metals in water samples. PROGRESS FIRST HALF: Extensive analysis completed for Raritan Bay; analysis will continue. 100%. PROGRESS SECOND HALF:																		X
2	A	Analysis of interactions between metals and organics. PROGRESS FIRST HALF: Work ongoing, as indicated in subtask plan. 30%. PROGRESS SECOND HALF:																		
3	A	Identification of some environmental organics playing a role in metal binding. PROGRESS FIRST HALF: Methodology development ongoing. 20%. PROGRESS SECOND HALF:						X												
4	E	Preliminary report on metals in Raritan Bay waters. PROGRESS FIRST HALF: Manuscript submitted. 100%. PROGRESS SECOND HALF:						X												
5	E	(M) Manuscript on organically bound Cd, Pb, and Cu in Raritan Bay waters. PROGRESS FIRST HALF: N/A. (Due FY77).															X			

REMARKS/RESULTS:
Extensive sampling of Raritan Bay and analysis for different forms of heavy metals, particularly lead and copper have been carried out. Lead and copper concentrations are significantly higher than values reported for other estuarine waters and tend to be transported in a strongly bound form. The Hudson River adds 3.5 times as much lead and 1.7 times as much copper to the system than does the Raritan River.

A FORM 32-15A
3)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 76

2. DATE PREPARED: 8-27-75

(Submit four copies.)
1: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

DP NUMBER: MAC-009-76-E1-A		4. SUB-OBJECTIVE CODE:	5. PRIOR DATE:
ASK NUMBER: 8818 P-4	7. ORGANIZATION CODE: FB-6300	8. FACILITY: Milford Laboratory	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-009-75-EI-A(01)
SUBTASK SUFFIX: 01	11. TASK TITLE: Microbiology and Chemistry Mid-Atlantic		
NUMBER OF STP'S: 2	12. SUBTASK TITLE: Marine Microbial Ecology		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Ecosystems Investigation Middle Atlantic Coastal Fisheries Cent
TOTAL FUNDS	B. END DATE	
SOURCE: In House	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. John T. Graikoski
MAN YEARS	17 A. COOPERATIVE RESOURCES	17 B. SOURCE: In House
SPECIES: Ground Fish		19. LIFE STAGE(S): Adult
WORK LOCATION: Mid-Atlantic - Inshore-Off-shore		21. PERCENT RECREATIONAL: 50-50

KEY WORDS

Marine bacteria, Fin-rot Disease, Marine Vibrios, Marine Anaerobes, Marine bacterial interrelationships.

SUBTASK OBJECTIVES AND METHODOLOGY

Contamination of the marine environment results in increased bacterial numbers and types. The objective is to determine bacterial interrelationships in the marine environment which contribute to the disease process by isolation and characterization of select groups of microorganisms.

OFFICIAL PREPARING REPORT *(Signature)* Investigation Chief Director of Investigations	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature*

OAA FORM 32-15B
(4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX

MAC-009-76-E1-A-(01)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
1	A	Long Island Thames River Sampling - Enumeration. PROGRESS FIRST HALF: Sampling and enumeration completed July-October	X			X			X			X			X					
	E	Identification-characterization bacteria. PROGRESS FIRST HALF: Completed	X	-	-	-	-	-	-	-	-	-	-	-	X					
	M	Report - above PROGRESS FIRST HALF: Quarterly completed. Final in preparation.					X					X				X				
4	A	Long Island Sound - Western End Sampling - Enumeration. PROGRESS FIRST HALF: Postponed. Eatons Neck Disposal Site deferred by Corps of Engineers						X				X								
5	E	Identification-characterization bacteria. PROGRESS FIRST HALF: As Above							X	-	-	-	-	-	-	-	-	-	-	X

AA FORM 32-158
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-009-76-E1-A-(01)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
M	Report - Above PROGRESS FIRST HALF: As above.											X							X
A	New York Bight-Fin-Rot Disease Sampling - Enumeration. PROGRESS FIRST HALF: Sampling enumeration - New York Bight - Great Bay completed.			X				X						X					
E	Identification-characterization PROGRESS FIRST HALF: Characterization of isolates completed.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
M	Reports - Above PROGRESS FIRST HALF: Fecal coliform distribution in NYB - manuscript prepared.						X						X				X		

)AA FORM 32-15B
(4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX
MAC-009-76-E1-A-(01)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

ER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
10	A	New York Bight - Aerobes/Anaerobes Sampling - Enumberation PROGRESS FIRST HALF: Sampling and enumeration completed - September			X				X				X			X				
11	E	Identification-characterization PROGRESS FIRST HALF: Not done. Postponed to second sampling.			X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
12	M	Report - Above PROGRESS FIRST HALF: Iterim field report prepared.						X				X						X		

NOAA FORM 32-15A (1-73)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 76

2. DATE PREPARED: 8/27/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER: MAC-009-76-E1-A		4. SUB-OBJECTIVE CODE:	5. PRIOR DATE:
TASK NUMBER: 8818 P-4	7. ORGANIZATION CODE: FB-6300	8. FACILITY: Milford Laboratory	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-009-75-EI-A(02)
SUBTASK SUFFIX: 02	11. TASK TITLE: Microbiology-Chemistry Mid-Atlantic		
NUMBER OF STP'S: 2	12. SUBTASK TITLE: Heavy Metal Contamination-Marine Enviornment		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Ecosystems Investigation Middle Atlantic Coastal Fisheries Cent
B. TOTAL FUNDS	B. END DATE	
C. SOURCE: In House	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: John T. Graikoski
D. MAN YEARS	17 A. COOPERATIVE RESOURCES	17 B. SOURCE: In House

18. SPECIES: Up to 20 key species	19. LIFE STAGE(S): Adult-young
20. WORK LOCATION: Mid-Atlantic Coastal-Off-shore	21. PERCENT RECREATIONAL: 50-50

22. KEY WORDS
Heavy Metals-Fish, Shellfish, Heavy Metals Toxicity, Heavy Metals-Marine Environment

23. SUBTASK OBJECTIVES AND METHODOLOGY
Subtask objectives are to determine the distribution, uptake and clearance of select heavy metals in marine animals, sediments and food-chain organisms by atomic absorption spectroscopy.

24. OFFICIAL PREPARING REPORT *(Signature)*: John T. Graikoski Investigation Chief

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*: Carl J. Sindermann

A FORM 32-15B
41

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STEP SUFFIX
MAC-009-76-E1-A-(02)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Trace Metals - Seawater and Biota - Long Island Sound/Raritan Bay. PROGRESS FIRST HALF: Lobsters and whelk were sampled over a one year period. New survey of food chain organisms started in fall. MS submitted for sediment heavy metals, Raritan Bay; MS completed for sediments, heavy metals, Long Island Sound. PROGRESS SECOND HALF:	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
E	Evaluation of Seawater Methodology. PROGRESS FIRST HALF: Analyses for cadmium appears OK. Ag, Pb, Cu, Zn, analyses are difficult, no good procedure found. PROGRESS SECOND HALF:							X											
M	Report on Metals Seawater PROGRESS FIRST HALF: No progress as yet. PROGRESS SECOND HALF:												X			X			
A	New York Bight - Metals Food Chain Organisms/ Sediments. PROGRESS FIRST HALF: Food chain organisms postponed. Metal analyses of sediments completed for 64 stations collected from during 5 quarterly cruises. Metal analyses for 20 stations at DWD #106 completed. Metal analyses completed for 60 OCS stations. PROGRESS SECOND HALF:							X	-	-	-	-	-	-	X				
M	Report - above PROGRESS FIRST HALF: Paper published on 1st DWD #106 research. Manuscript submitted for 2nd DWD #106. PROGRESS SECOND HALF:												X					X	
	Uptake-distribution-clearance - Metals and Marine Animals PROGRESS FIRST HALF: This section only an introduction to 7, 8, 9 and 10. PROGRESS SECOND HALF:	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
	Lobsters - Ag PROGRESS FIRST HALF: Changed to Cd instead of Ag. Analyses complete. Data to be used in a manuscript written by different investigation. PROGRESS SECOND HALF:	X	-	-	-	-	-	-	-	-	-	-	X						

A FORM 32-15B
4)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP SUFFIX
MAC-009-76-E1-A-(02)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

UMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
E	Flounder - Hg-Cd PROGRESS FIRST HALF: Analyses complete, data used in a manuscript by different investigation. PROGRESS SECOND HALF:	X	-	-	-	-	-	-	-	-	-	-	X						
E	Oysters - Cd PROGRESS FIRST HALF: Ag and not Cd was the metal exposed to oysters. Analyses about 1/3 complete. PROGRESS SECOND HALF:	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
M	Reports - above PROGRESS FIRST HALF: One manuscript has been completed for the winter flounder. Wenzloff of our investigation is co-author on the manuscript. PROGRESS SECOND HALF:			X			X			X			X			X			X
A	Survey - Scallops - Surf Clam PROGRESS FIRST HALF: Trace metal determinations were completed for surf clam; data available for Technical Report. PROGRESS SECOND HALF:		X							X									
	Scallops PROGRESS FIRST HALF: No progress on analyses. PROGRESS SECOND HALF:		X	X															
M	Report - surf clams PROGRESS FIRST HALF: Manuscript is in preparation. PROGRESS SECOND HALF:					X													

FORM 32-15B

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP SUFFIX
MAC-009-76-E1-A-(02)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

UMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Delaware - Chespeake Bay Survey PROGRESS FIRST HALF: Postponed indefinitely. PROGRESS SECOND HALF:				X				X					X					
E	Sampling - Analysis PROGRESS FIRST HALF: Postponed indefinitely. PROGRESS SECOND HALF:						X							X					
M	Report - above PROGRESS FIRST HALF: Postponed indefinitely. PROGRESS SECOND HALF:										X							X	

NOAA FORM 32-15A (4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: FY 76

2. DATE PREPARED: August 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each.
Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER: MAC-055-76-IE-R		4. SUB-OBJECTIVE CODE:	5. PRIOR DATE: N/A
6. TASK NUMBER: 871217	7. ORGANIZATION CODE: FB6100	8. FACILITY: Sandy Hook Laboratory	9. PRIOR TDP NO. PLUS STP SUFFIX: N/A
10. SUBTASK SUFFIX: 01	11. TASK TITLE: MESA - NYB Biological Oceanography		
11. NUMBER OF STP'S: 3	12. SUBTASK TITLE: Analysis of Existing New York Bight Apex Benthic Samples and Data		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: July 1, 1975	A. NAME: Ecosystems Investigations
B. TOTAL FUNDS: N/A	B. END DATE: June 30, 1976	
C. SOURCE: NOAA/MESA	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. John B. Pearce
D. MAN YEARS: 5.7	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

18. SPECIES: Benthic Macroinvertebrates

19. LIFE STAGE(S): N/A

20. WORK LOCATION: New York Bight Apex

21. PERCENT RECREATIONAL:

22. KEY WORDS
Benthic macroinvertebrates, distribution, abundance, diversity, community structure, sampling validity, multivariate analysis

23. SUBTASK OBJECTIVES AND METHODOLOGY
To develop ecological insights into the effects of ocean dumping and natural environmental variables in the New York Bight on populations of benthic macroinvertebrates. Cooperative multivariate analyses with The Center for Experimental Design and Analysis (CEDDA) are planned.

24. OFFICIAL PREPARING REPORT *(Signature)*
Dr. K. McNulty
John B. Pearce

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann

DAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-055-76-IE-R(01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Sort and identify macrofauna Apr. 74 samples. PROGRESS FIRST HALF: Completed. PROGRESS SECOND HALF:	X	X																
E	Complete data report on 1. PROGRESS FIRST HALF: Data listing completed. Separate data reports on single quarterly cruises will no longer be prepared; instead, the data from all five quarterly cruises are being combined in a single data report. 1/ PROGRESS SECOND HALF:				X														
A	Sort and identify macrofauna Jan. '74 samples. PROGRESS FIRST HALF: Completed. PROGRESS SECOND HALF:		X		X														
E	Complete data report on 3. PROGRESS FIRST HALF: Same as 2 above. PROGRESS SECOND HALF:						X												
A	Sort and identify macrofauna Oct.'73 samples. PROGRESS FIRST HALF: Completed. PROGRESS SECOND HALF:				X			X											

REMARKS/RESULTS:

1/ These data reports and two papers were submitted for publication.

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-055-76-IE-R(01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
E	Complete data report on 5.									X									
	PROGRESS FIRST HALF: Same as 2 above.																		
	PROGRESS SECOND HALF:																		
A	Sort and identify replicate and offshore samples.								X	—	—	X							
	PROGRESS FIRST HALF: On schedule. 50%.																		
	PROGRESS SECOND HALF:																		
	Data report(s) on 7.												X						
	PROGRESS FIRST HALF: Outside of reporting period.																		
	PROGRESS SECOND HALF:																		
A	Obtain sediment grain - size, data, Apex.			X	—	—	X												
	PROGRESS FIRST HALF: Completed, except supplemental data on percentage mud, sand, and gravel to be supplied in April 1976.																		
	PROGRESS SECOND HALF:																		
E	Complete data report on .							X											
	PROGRESS FIRST HALF: Same as 2 above.																		

REMARKS/RESULTS:

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TOP NO. PLUS STP SUFFIX: MAC-055-76-IE-R(01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
	PROGRESS SECOND HALF:																		
A	Analyze for heavy metals in sediments. Aug. '76 cruise.			X	—	—	X												
	PROGRESS FIRST HALF: Completed.																		
	PROGRESS SECOND HALF:																		
E	Complete data report on 11.						X												
	PROGRESS FIRST HALF: Same as 2 above.																		
	PROGRESS SECOND HALF:																		
A	Determine macrofaunal sampling validity (Saila).			X	—	X													
	PROGRESS FIRST HALF: About 50% completed. Contract with Dr. Saila terminates 30 June 1976.																		
	PROGRESS SECOND HALF:																		
A	Perform benthic community structure analyses.	X	—	—	—	—	—	—	X										
	PROGRESS FIRST HALF: About 17% completed. Both Drs. Saila and Rozett began one-year analyses under MESA contracts in January 1976.																		
	PROGRESS SECOND HALF:																		
	REMARKS/RESULTS:																		

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TOP NO. PLUS STP SUFFIX
MAC-055-76-IE-R(01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
5	A	Define strata of macrofaunal assemblages.	X	—	—	—	—	—	—	X										
		PROGRESS FIRST HALF: About 17% completed. Both Drs. Saila and Rozett began one-year analyses under MESA contracts in January 1976. Contract with Dr. Saila stipulates completion of stratification analysis by 30 September 1976.																		
		PROGRESS SECOND HALF:																		
6	A	Perform multivariate analyses (with CEDDA).			X	—	—	—	—	—	—	X								
		PROGRESS FIRST HALF: About 17% completed. Both Drs. Saila and Rozett began one-year analyses under MESA contracts in January 1976.																		
		PROGRESS SECOND HALF:																		
7	E	Complete paper on 11-14.												X						
		PROGRESS FIRST HALF: Outside of reporting period, but completion of papers is dependent on completion of analysis, probably delayed about 6 months.																		
		PROGRESS SECOND HALF:																		
		NOTE: This schedule reflects that MESA funding is on a one-year basis.																		

REMARKS/RESULTS:

JBP
6 IV 76

NOAA FORM 32-15A
(4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: FY 76

2. DATE PREPARED: August 26, 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER: MAC-055-76-IE-R		4. SUB-OBJECTIVE CODE:	5. PRIOR DATE: N/A
6. TASK NUMBER: 871217	7. ORGANIZATION CODE: FB6100	8. FACILITY: Oxford Laboratory	9. PRIOR TDP NO. PLUS STP SUFFIX: N/A
10. SUBTASK SUFFIX: 02	11. TASK TITLE: MESA - NYB Biological Oceanography		
13. NUMBER OF STP'S: 3	12. SUBTASK TITLE: Environmentally - induced mutagenesis in marine fish		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: July 1, 1975	A. NAME: Experimental Biology Investigations
B. TOTAL FUNDS	B. END DATE: June 30, 1976	
C. SOURCE: NOAA/MESA	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. James E. Hanks
D. MAN YEARS: 1.1	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

18. SPECIES: All with pelagic larvae

19. LIFE STAGE(S): Eggs and larvae

20. WORK LOCATION: New York Bight Apex

21. PERCENT RECREATIONAL: About 50%

22. KEY WORDS: Mutagenesis, chromosomal aberrations, R/V WESTWARD, ichthyoplankton, fish eggs, fish larvae

23. SUBTASK OBJECTIVES AND METHODOLOGY

Fish eggs from the apex of the New York Bight will be studied cytogenetically for chromosomal aberrations, radiomimetic, and cyto-toxic effects. Eggs from polluted N. Y. Bight waters will be compared with eggs from relatively unpolluted waters.

24. OFFICIAL PREPARING REPORT *(Signature)*

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*

AA FORM 32-15B
-741

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TOP NO. PLUS STP SUFFIX: MAC-055-76-IE-R(0

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completi of selected operational activities that collectively define the subtask for th 18 month planning period. Connect "x's" with a solid bar. "Events" occu at specific points in time. Indicate these significant achievements by placi an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 19				
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	
A	Examine mutagenesis in WESTWARD samples. PROGRESS FIRST HALF: Completed. PROGRESS SECOND HALF:	X—	—	—	—	X												
E	Complete paper on WESTWARD samples. PROGRESS FIRST HALF: Completed. Manuscript for MESA Technical Memorandum complete Manuscript for Science in preparation. PROGRESS SECOND HALF:						X											
A	Examé mutagenesis in MACFC 1966-67 samples. PROGRESS FIRST HALF: On schedule. 50% completed. PROGRESS SECOND HALF:			X—	—	—	—	—	—	—	X							
A	Examine mutagenesis in spring 1976 samples. PROGRESS FIRST HALF: On schedule. 25% completed. PROGRESS SECOND HALF:									X—	—	—	X					
A	Develop scoring system of anomolies. PROGRESS FIRST HALF: On schedule. 50% completed. PROGRESS SECOND HALF:	X—	—	—	—	—	—	—	—	—	—	—	X					

REMARKS/RESULTS: 9/6/76

One expanded abstract submitted for publication.

NOAA FORM 32-15A
(4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: FY 76

2. DATE PREPARED: August 26, 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER: MAC-055-76-IE-R		4. SUB-OBJECTIVE CODE:	5. PRIOR DATE: N/A
6. TASK NUMBER: 871217	7. ORGANIZATION CODE: FB6100	8. FACILITY: Milford Laboratory	9. PRIOR TDP NO. PLUS STP SUFFIX: N/A
10. SUBTASK SUFFIX: 03	11. TASK TITLE: MESA - NYB Biological Oceanography		
11. NUMBER OF STP'S: 3	12. SUBTASK TITLE: Abnormalities in Fish and Shellfish which may be associated with Ocean Dumping		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: July 1, 1975	A. NAME: Pathobiology Investigations
B. TOTAL FUNDS	B. END DATE: June 30, 1976	
C. SOURCE	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield
D. MAN YEARS: 1.6	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

18. SPECIES: Flounders -- winter, summer, window-pane

19. LIFE STAGE(S): Juvenile and adult

20. WORK LOCATION: New York Bight Apex

21. PERCENT RECREATIONAL: About 75%

22. KEY WORDS: Fin rot, fin erosion, fish disease, pathobiology, "black gill disease" of crustaceans

23. SUBTASK OBJECTIVES AND METHODOLOGY

To determine by field and laboratory studies whether the degraded areas of the New York Bight Apex induce fin rot disease in winter and summer flounder, and to initiate studies on "black gill disease" of crabs.

24. OFFICIAL PREPARING REPORT *(Signature)*: Dr. K. McNulty John B. Pearce

25. FMC DIRECTOR ~~OR~~ DESIGNATED REPRESENTATIVE *(Signature)*: Carl J. Sindermann

OAA FORM 32-15B
4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP SUFFIX

MAC-055-76-IE-R(03)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977				
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
1	A	Conduct gross and microscopic studies on the growth of fin rot disease in laboratory - held flounder. PROGRESS FIRST HALF: Outside of reporting period. PROGRESS SECOND HALF:													X	—	—	X	
2	E	Prepare manuscript on No. 1. PROGRESS FIRST HALF: Outside of reporting period. PROGRESS SECOND HALF:																X	
3	A	Monitor incidence of fin rot disease in summer flounder from Raritan-Sandy Hook Bays and from Great Bay, N.J. PROGRESS FIRST HALF: Completed. PROGRESS SECOND HALF:	X	—	—	—	—	X											
4	E	Prepare manuscript on No. 3. PROGRESS FIRST HALF: Completed. PROGRESS SECOND HALF:						X											
5	A	Conduct entrapment studies with winter flounder in sewage sludge dumping area of N.Y. Bight. PROGRESS FIRST HALF: Five months of observations completed.	X	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

REMARKS/RESULTS:

Two papers submitted for publication.

OAA FORM 32-15B
4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX
MAC-055-76-IE-R(03)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976 1	2	3	4	5	6	7	8	9	10	11	12	Fiscal Year 1977 1	2	3	4	5
		PROGRESS SECOND HALF:																	
5	A	Conduct histological studies of normal epidermis of winter, summer and windowpane flounders.			X-	—	—	—	X										
		PROGRESS FIRST HALF: Slides made. Analyses complete.																	
		PROGRESS SECOND HALF:																	
7	A	Monitor fin rot disease prevalence in pound and fyke net catches from Sandy Hook - Raritan Bays.	X-	—	—	—	—	—	—	—	—	—	—	—	—	—	—	X	
		PROGRESS FIRST HALF: No progress to date. Summer and fall 1975 catches not examined the spring-summer 1976 catch will be examed. Fishery closes down in winter.																	
		PROGRESS SECOND HALF:																	
8	E	Collate and analyze data from No. 7.																	X
		PROGRESS FIRST HALF: Outside of reporting period.																	
		PROGRESS SECOND HALF:																	

REMARKS/RESULTS: 9/30 6 III 76

Two papers submitted for publication.

AA FORM 32-15A
-741

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-055-76-IE-R-1	IV-A-3	10/25/74

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
871217	FB6200	Sandy Hook Laboratory - 162	MAC-055-75-IE-R-1 (1

SUBTASK SUFFIX	11. TASK TITLE
(11)	MESA - New York Bight: Biological Oceanography

NUMBER OF STP'S	12. SUBTASK TITLE
11	Analysis of Groundfish Samples for MESA Objectives

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Resource Assessment Investigations
TOTAL FUNDS	B. END DATE	
SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
MAN YEARS: .5	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

SPECIES	19. LIFE STAGE(S)
ltispecies	Juvenile - Adult

WORK LOCATION	21. PERCENT RECREATIONAL
v York Bight	50%

KEY WORDS

SA — Species composition — Relative abundance
oundfish — Disease incidence

UBTASK OBJECTIVES AND METHODOLOGY

ovide a platform for observing, collecting and preparing pathological groundfish and ertebrate specimens for laboratory analysis. Analyze samples from all groundfish ises and determine difference in composition and relative abundance of species taken MESA impact areas. Complete fish distribution Ms. Provide trimester report material. plete special reports as requested for MESA.

FFICIAL PREPARING REPORT *(Signature)*
Arthur S. Merrill for

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Capt. Stanley Berman

A FORM 32-15B
(4)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP SUFFIX

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

MAC-055-76-IE-R-1(11)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Collect and distribute pathological samples.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PROGRESS FIRST HALF: Pathological specimens collected and distributed on schedule.																		
A	Analyze groundfish samples for MESA-related objectives.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PROGRESS FIRST HALF: Groundfish sample analysis on schedule; results indicate some new survey work desirable.																		
A	Prepare trimester report to MESA.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PROGRESS FIRST HALF: Trimester report data supplied to coordinator on schedule.																		
A	Ms: Fish distribution NYB-MESA monograph.	X-	-	-	-	-	-	-	-	-	X								
	PROGRESS FIRST HALF: MESA monograph delayed due to higher priority assignments.																		
	Complete special reports for MESA.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PROGRESS FIRST HALF: Seven special reports completed and submitted to MESA for publication on schedule.																		

NOAA FORM 32-15A (4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: FY 76

2. DATE PREPARED: August 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-061-76-IE-R-1	IV-A-9	October 1974

6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS SUFFIX
R8C201	FB6100	Sandy Hook Laboratory	MAC-061-75-IE-R-1

10. SUBTASK SUFFIX	11. TASK TITLE
1	The Effect of Temperature Change on Schooling and Feeding Behavior in Juvenile Bluefish and Mullet
11. NUMBER OF STP'S	**12. SUBTASK TITLE**
1	

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Ecosystems Investigations
B. TOTAL FUNDS	B. END DATE	
C. SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. John B. Pearce
D. MAN YEARS	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

18. SPECIES: Tautoga onitis; Pomatomus saltatrix; Pseudopleuronectes americanus; Mugil cephalus; Tautogolabrus adspersus

19. LIFE STAGE(S): Juveniles, Adults

20. WORK LOCATION: Sandy Hook Laboratory, New York Bight.

21. PERCENT RECREATIONAL:

22. KEY WORDS

Thermal stress, feeding, schooling, vision, olfaction, distribution

23. SUBTASK OBJECTIVES AND METHODOLOGY

This task will use our previous findings on normal behavior to measure the effects of thermal stress on social interactions and feeding in juvenile mullet and bluefish and on activity, territoriality and feeding of adult tautog. Field studies will focus on factors affecting distribution of juvenile tautog, cunner and winter flounder.

24. OFFICIAL PREPARING REPORT *(Signature)*: John B. Pearce

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*: [illegible]

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-061-76-IE-R-1 (01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Effects of thermal stress on mullet schooling.	X																	
	PROGRESS FIRST HALF: Thermal stress tests on mullet schooling delayed by bluefish and tautog tests. 0%.																		
	PROGRESS SECOND HALF:																		
A	Effects of thermal stress on mullet feeding.	X																	
	PROGRESS FIRST HALF: Thermal stress tests on mullet feeding delayed by bluefish and tautog tests. 0%.																		
	PROGRESS SECOND HALF:																		
E	Completion of thermal stress effects studies on mullet.																		X
	PROGRESS FIRST HALF:																		
	PROGRESS SECOND HALF:																		
A	Normal schooling and feeding responses of juvenile bluefish as related to visual and olfactory cues.					X													
	PROGRESS FIRST HALF: Ahead of schedule. 35%. Responses of juvenile bluefish to an olfactory stimulus results in the break-up of the school, a directed search by individuals accompanied by increased swimming speed. These behaviors can be 1/																		
	PROGRESS SECOND HALF:																		
A	Effects of thermal stress on activity, feeding and territoriality of adult tautog.						X									X			
	PROGRESS FIRST HALF: Ahead of schedule. 50%. Normal patterns of activity, feeding, aggression and interfish spacing were disrupted when the fish were exposed to high, 2/																		

REMARKS/RESULTS:
1/ quantified and used as measures of feeding motivation under environmental perturbations.
2/ sublethal temperature.

GAA FORM 32-158
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-061-76-IE-R-1(01

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
	PROGRESS SECOND HALF:																		
M	Publication: The Effect of Temperature on the Behavior of Young Tautog, Tautoga onitis (L.) (supported in part by these funds).								X										
	PROGRESS FIRST HALF: Published. 100%. Olla, B.L. and A.L. Studholme. 1975. The Effect of Temperature on the Behavior of Young Tautog, Tautoga onitis (L.) Proc. 9th Europ. mar. biol. Symp., 75-93.																		
	PROGRESS SECOND HALF:																		
A	Distribution of juvenile cunner, tautog and winter flounder as related to various environmental parameters including time of day, season, tide, temperature and substrate.	X	—	—	—	X					X	—	—	—	—	—	X		
	PROGRESS FIRST HALF: On schedule. 40%. Distribution of juvenile cunner during the summer appears related to the availability of cover (substrate) and food resources. The fish are diurnally active, feeding in the day and always remaining in proximity 1/																		
	PROGRESS SECOND HALF:																		
M	Publication: The Effect of Temperature on the Behavior of Marine Fishes: A Comparison Among Atlantic Mackerel, Scomber scombrus, Bluefish, Pomatomus saltatrix and Tautog, Tautoga onitis (supported in part by these funds).																		
	PROGRESS FIRST HALF: Published. 100%. Olla, B.L., A.L. Studholme, A.J. Bejda, C. Samet and A.D. Martin, 1975. The Effect of Temperature on the Behaviour of Marine Fishes. Proc. IAEA Symp. on Combined Effects of Radioactive, Chemical and Thermal 2/																		
	PROGRESS SECOND HALF:																		

REMARKS/RESULTS:
1/ to cover, with the distance dependent on their age.
2/ Releases to the Environment. IAEA-SM-197/4: 299-308.

NOAA FORM 32-15A (4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: FY 76

2. DATE PREPARED: August 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-067-76-IE-A-1	1-B-13-14	

6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
88C2Q1	FB6100	Sandy Hook Laboratory	

10. SUBTASK SUFFIX	11. TASK TITLE
01	Primary Productivity and its Relationship to Pollution and Coastal Fisheries

11. NUMBER OF STP'S	12. SUBTASK TITLE
3	Seabed Oxygen Consumption in the New York Bight

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)* N/A	A. NAME: Ecosystems Investigations
B. TOTAL FUNDS	B. END DATE N/A	
C. SOURCE: NMFS	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. John B. Pearce
D. MAN YEARS: 2	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE: NMFS

18. SPECIES	19. LIFE STAGE(S)
Benthos	All

20. WORK LOCATION	21. PERCENT RECREATIONAL
New York Bight, Lower Hudson Estuary	N/A

22. KEY WORDS

Benthic, respiration, seabed oxygen consumption

23. SUBTASK OBJECTIVES AND METHODOLOGY

Measure seabed oxygen consumption and map the distribution of the present rates of decomposition or organic wastes occurring as a result of biological and non-biological processes in the apex of the New York Bight. Methods will be those of Pamatmat and Smith using oxygen electrodes; data will be examined for determining assimilation capacity and benthic environmental conditions with regard to demersal fisheries and other benthic fauna.

24. OFFICIAL PREPARING REPORT *(Signature)*: J. B. Pearce

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*: [illegible]

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-067-76-IE-A-1(01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
E	Monitoring cruise for Apex. PROGRESS FIRST HALF: Accomplished August 1975. To be repeated in lesser detail August 1976. PROGRESS SECOND HALF:		X										X		X				
E	Baseline survey Greater Bight. PROGRESS FIRST HALF: To be accomplished August 1976. Coverage to be greatly decreased to increase immediate relevance of study to assist in answering more immediate questions. Increased coverage dependent upon manpower and ship time. PROGRESS SECOND HALF:														X				
A	Data Analyses - Apex. PROGRESS FIRST HALF: Complete. Paper entitled "Seabed Oxygen Consumption - N.Y. Bight Apex, U.S.A." in press in Special Symposium Vol. of Limnology and Oceanography. Some additional analysis concerning integration with other studies will continue. PROGRESS SECOND HALF:	X	—	—	—	—	—	—	—	—	X								
E	SYMAP's - Apex. PROGRESS FIRST HALF: Complete except for maps of organic carbon in sediment. Should be completed in one month. PROGRESS SECOND HALF:					X													

REMARKS/RESULTS:

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-067-76-IE-A-1(01

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
E	M Data Report - Apex. PROGRESS FIRST HALF: Complete. Data Report to MESA complete and in press as ERL data report on Seabed Oxygen Consumption in the New York Bight Apex - March 1974 to February 1975, by Thomas, Phoel and Steimle. Paper entitled "Seabed Oxygen 1/ PROGRESS SECOND HALF:	X					X					X							
A	Laboratory analysis - Greater Bight. PROGRESS FIRST HALF: To begin Aug. 1976. PROGRESS SECOND HALF:														X				
A	Data analysis - Greater Bight. PROGRESS FIRST HALF: To begin Sep. 1976. PROGRESS SECOND HALF:															X			
E	SYMAP's Greater Bight. PROGRESS FIRST HALF: Mapping via SYMAP may not occur due to change in coverage listed in 2E above. PROGRESS SECOND HALF:																		X

REMARKS/RESULTS:

1/ Consumption in the NY Bight Apex, U.S.A." by Thomas, Phoel, Steimle, O'Reilly and Evans. Abstract of the above paper and presentation at Symposium on the Middle Atlantic Continental Shelf and N.Y. Bight held Nov. 75, N.Y., N.Y. Paper entitled "Seabed Oxygen Consumption in the Lower Hudson Estuary" presented at the 4th Symposium on the Hudson River at Bent Mt., N.Y. Paper to be published as part of the Proceedings.

NOAA FORM 32-15A
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: FY 76

2. DATE PREPARED: August 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER: MAC-067-76-IE-A		4. SUB-OBJECTIVE CODE: IV-A-2	5. PRIOR DATE:
TASK NUMBER: 881801	7. ORGANIZATION CODE: FB6100	8. FACILITY: Sandy Hook Laboratory 161	9. PRIOR TDP NO. PLUS STP SUFFIX: New
SUBTASK SUFFIX: 02	11. TASK TITLE: Primary Productivity and its Relationship to Pollution and Coastal Fisheries		
NUMBER OF STP'S: 2 3	12. SUBTASK TITLE: Ecology of Chronically Occurring Phytoplankton Blooms in the New York Bight, including Lower New York Harbor and Adjacent Waters		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Ecosystems Investigations
TOTAL FUNDS	B. END DATE	
SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT:
MAN YEARS	17 A. COOPERATIVE RESOURCES: N.J. Department of Environmental Protection	17 B. SOURCE

SPECIES: Phytoflagellates causing deleterious blooms, especially: Massartia rotundata, Coscinodiscus luteus, Prorocentrum micans

19. LIFE STAGE(S): Motile stages

WORK LOCATION: Lower New York Harbor, New Jersey Shore, New York Bight Apex

21. PERCENT RECREATIONAL: 50%

KEY WORDS: phytoplankton, plankton blooms, "red tides", eutrophication, pollution.

SUBTASK OBJECTIVES AND METHODOLOGY

Investigate relationships of chronic phytoplankton blooms, including deleterious types, with eutrophication and other contributing factors resulting from Man's activities. To this end, subtask emphasizes investigation of nutritional and physiological capabilities of causative organisms and through comparison, in locales where blooms most frequently occur, of phytoplankton annual succession, and bloom development, with nutrient supply, especially critical organic and inorganic compounds having origin in pollution. Investigation examines impact on marine fisheries and recreational resources of environment. Nutritional studies methodology (cont'd)

OFFICIAL PREPARING REPORT *(Signature)*: John B. Pearce

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*: Carl J. Sindermann

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-067-76-IE-A-02

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E.	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Ability of spp. to utilize variety of inorganic and organic N, P and C compounds; work completed. PROGRESS FIRST HALF: Initial phytoplankter nutritional studies to determine association of blooms (red tide) with eutrophication 1/ PROGRESS SECOND HALF:	X																	
E	Manuscript in draft, final form. PROGRESS FIRST HALF: Manuscript prepared for submission to Center Editorial process. 90%. PROGRESS SECOND HALF:	—	—	—	—	—	X												
A	Salinity tolerance studies. PROGRESS FIRST HALF: Initial work on salinity tolerance and possible stress effects of estuarine-to-ocean salinity changes on 2/ PROGRESS SECOND HALF:	—	—	—	—	—	—	—	—	X									
E	Manuscript partially in draft, final draft. PROGRESS FIRST HALF: Results of initial salinity studies were tabulated and a manuscript begun. 75%. PROGRESS SECOND HALF:	—	—	—	—	—	—	—	—	—	—	—	X						

REMARKS/RESULTS:
1/ in New York Harbor completed. 100%.
2/ growth of bloom phytoplankters completed. Additional studies on rates of growth in salinities spanning this range were completed. 100%.

AA FORM 32-15B
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-067-76-IE-A-02

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Importance of variety of inorganic and organic N and P compounds in spp. growth stimulation.					X													
	PROGRESS FIRST HALF: Tests of the relative importance of organic and inorganic N and P compounds were suspended during the first half of FY 76 due to increased need for field survey work. 85%.																		
	PROGRESS SECOND HALF:																		
A	Vitamin requirements; critical levels of vitamin B_{12}. Work temporarily suspended; additional time needed for field survey.						X						X						
	PROGRESS FIRST HALF: Critical levels of vitamin B_{12} determined for one species; additional experiments are required for the other two phytoplankters. 30%.																		
	PROGRESS SECOND HALF:																		
A	Temperature effects on spp. growth. Work temporarily suspended due to incubator breakdown.				X					X									
	PROGRESS FIRST HALF: Tests of temperature effects on growth of the phytoplankters were suspended during the first half of FY 76. 50%.																		
	PROGRESS SECOND HALF:																		
A	Optimal photoperiod studies.																		
	PROGRESS FIRST HALF: Photoperiod studies completed. 100%.																		
	PROGRESS SECOND HALF:																		

REMARKS/RESULTS:

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TOP NO. PLUS STP SUFFIX: MAC-067-76-IE-A-02

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Optimal light intensity studies.						X												
	PROGRESS FIRST HALF: Tests of optimal light intensities for growth of the phytoplankters completed. Tests of the effects of organic nutrients on growth at limiting light intensities is considered a desirable extension of this work 1/																		
	PROGRESS SECOND HALF:																		
E	First draft of paper concerned with numbers 5, 6, 7.												X						
	PROGRESS FIRST HALF: Manuscript preparation on light intensity and photoperiod studies behind schedule. 10%.																		
	PROGRESS SECOND HALF:																		
A	Effects of metals on growth and tolerance to variety of metals; initial work completed, to be resumed.												X						
	PROGRESS FIRST HALF: Study of effects of of metals on bloom phytoplankters was not resumed. 10%.																		
	PROGRESS SECOND HALF:																		
A	Effects of external metabolities on bloom development and species dominance; dependent on equipment acquisition.									X									
	PROGRESS FIRST HALF: Equipment for work on effects of external metabolites/inter-specific competition was ordered. 0%.																		
	PROGRESS SECOND HALF:																		

REMARKS/RESULTS:
1/ (New York Harbor waters are very turbid.) 100%.

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TOP NO. PLUS STP SUFFIX

MAC-067-76-IE-A-02

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Concentrations of various critical nutrients required in blooms, continuous culture facilities required; work dependent upon equipment acquisition.												X						
	PROGRESS FIRST HALF: Equipment for work on crtical concentrations of essential nutrients in the promotion of blooms not acquired. 0%.																		
	PROGRESS SECOND HALF:																		
A	Phytoplankton succession/nutrient water chemistry survey. (In cooperation with N.J. Department of Environmental Protection.)	X	—	—	—	—	—	—	—	—	—	—							
	PROGRESS FIRST HALF: Initial phase of phytoplankton/nutrient survey collections completed at end of first half of FY76. 80%.																		
	PROGRESS SECOND HALF:																		
A	Manuscript in preparation, previous studies (fish disease).	X	—	—	—	—	—	—	—	—	—	—							
	PROGRESS FIRST HALF: On Schedule. 10%.																		
	PROGRESS SECOND HALF:																		
	REMARKS/RESULTS:																		

NOAA FORM 32-15A (4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: FY 76

2. DATE PREPARED: August 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-067-76-IE-A-1	1-B-13-14	

6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
88C2Q1	FB6100	Sandy Hook Laboratory	

10. SUBTASK SUFFIX	11. TASK TITLE
~~02~~ 03	Primary Productivity and its Relationship to Pollution and Coastal Fisheries

11. NUMBER OF STP'S	12. SUBTASK TITLE
3	Phytoplankton and Primary Productivity, New York Bight and Lower Hudson Estuary

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Ecosystems Investigations
B. TOTAL FUNDS	B. END DATE: N/A	
C. SOURCE: NMFS	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. John B. Pearce
D. MAN YEARS: 2	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: NMFS

18. SPECIES	19. LIFE STAGE(S)
Phytoplankton	All

20. WORK LOCATION	21. PERCENT RECREATIONAL
New York Bight - Lower, Sandy Hook, Raritan Bays Lower Hudson Estuary	N/A

22. KEY WORDS
Phytoplankton, chlorophyll, diversity indices, primary productivity, nutrients, dissolved organic carbon

23. SUBTASK OBJECTIVES AND METHODOLOGY Investigate and map the seasonal variations in the distribution and magnitude of primary productivity, changes in species composition, and biomass in Raritan and Bight Apex. These data will be compared with the distributions and magnitudes of toxic materials, nutrients, etc. and examined for their potential effects on fisheries. Methods will be those contained in A Practical Handbook of Seawater Analysis by Strickland & Pavone. Newely developed methods for measuring the release, uptake, assilitation and decomposition of dissolved organic carbon will be used also.

24. OFFICIAL PREPARING REPORT *(Signature)*: John B. Pearce

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*: Carl J. Sindermann

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TOP NO. PLUS STP SUFFIX: MAC-067-76-EI-A1(03

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Computer Processing	X	—	—	—	X													
	PROGRESS FIRST HALF: All raw data has been entered into the MACFC computer data files. SYMAPing yet to be accomplished.																		
	PROGRESS SECOND HALF:																		
A	Data Analysis.	X	—	—	—	—	—	—	—	X									
	PROGRESS FIRST HALF: Data analysis underway with statistical analysis occurring with certain sections of the data.																		
	PROGRESS SECOND HALF:																		
E	(M) Data Report.										X								
	PROGRESS FIRST HALF: Paper, entitled "Primary Productivity and Dissolved Organic Matter Productivity in the Lower Hudson Estuary", presented at the 4th Hudson River Symposium, Bear Mt., NY. Paper to be published in proceedings.																		
	PROGRESS SECOND HALF:																		
E	Survey Cruises - Lower Hudson - NYB.											X	—	—	—	—	—	—	—
	PROGRESS FIRST HALF: To begin August 1976.																		
	PROGRESS SECOND HALF:																		
	REMARKS/RESULTS:																		

NOAA FORM 32-15A (4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: FY 76

2. DATE PREPARED: August 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-069-76-EI-R-1	IV-A-9	October 1974

6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
R8C204	FB6100	Sandy Hook Laboratory (161)	MAC-069-75-IE-R-1

10. SUBTASK SUFFIX	11. TASK TITLE
01	Effects of Dredge Spoil Disposal, New London, Connecticut

11. NUMBER OF STP'S	12. SUBTASK TITLE
2	SAME

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)* July 1, 1974	A. NAME Ecosystems Investigations
B. TOTAL FUNDS	B. END DATE June 30, 1976	
C. SOURCE U. S. Navy	C. CONTRACT/GRANT NUMBER R8C204	B. FOR INFORMATION CONTACT: Dr. John B. Pearce
D. MAN YEARS	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A

18. SPECIES	19. LIFE STAGE(S)
N/A	N/A

20. WORK LOCATION	21. PERCENT RECREATIONAL
Thames River, Eastern Long Island Sound, Block Island Sound	N/A

22. KEY WORDS
Benthic macrofauna, sediments, contaminants, dredging and spoiling, dominants, forage species, productivity, food webs, recolonization

23. SUBTASK OBJECTIVES AND METHODOLOGY
Objectives: Characterize predisposal sediments and benthic macrofauna of Thames River and New London Dumping Ground; monitor impacts of spoiling on these; determine rates and types of recolonization; study finfish gut contents to identify important forage species; investigate natural history, productivity and spoiling effects on these forage species to partially assess disposal impacts on resource species. Methodology: season benthic and water samples, lab sorting and analyses. Chemical and geological analyses. In situ exposure studies, dive surveys and sedimentation rate experiments.

24. OFFICIAL PREPARING REPORT *(Signature)* John B. Pearce

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)* Paul Sandberg

AA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TOP NO. PLUS STP SUFFIX

MAC-069-76-EI-R-(01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Post dredging (Phase 1) field survey. PROGRESS FIRST HALF: Completed on schedule. PROGRESS SECOND HALF:			X	X														
A	1/Seasonal surveys of alternate disposal area ("East Hole" Block Island Sound) to complete 1-year assessment of macrofauna. PROGRESS FIRST HALF: First two cruises completed ahead of schedule. PROGRESS SECOND HALF:					X				X				X					
E	Submit report to Navy on findings of second East Hole survey. PROGRESS FIRST HALF: Completed on schedule. PROGRESS SECOND HALF:			X															
E	Final report to Navy on biological and sedimentary characteristics of East Hole. PROGRESS FIRST HALF: Near schedule (draft report complete). Accomplished: Assimilation of inhouse data with unpublished historical information to yield comprehensive picture of sediments, benthic macrofauna, finfish and food webs in East Hole ar PROGRESS SECOND HALF:									X									

REMARKS/RESULTS:
1/ Contingent on Navy's acceptance of a proposal for continuation of monitoring survey.

AA FORM 32-15B
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TOP NO. PLUS STP SUFFIX: MAC-069-76-EI-R(01)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Quarterly reports submitted to Navy, ACE and Interagency Scientific Advisory Subcommittee on Ocean Dredging and Spoiling concerning survey findings under original proposal.		X			X			X			X							
	PROGRESS FIRST HALF: First three reports completed on schedule, fourth in draft form. Accomplishments: 15 months' interdisciplinary study indicates no major spoiling impacts.																		
	PROGRESS SECOND HALF:																		
E	Prepare manuscript on interim results of macrofauna studies.						X	—	—	—	—	—	—	X					
	PROGRESS FIRST HALF: Behind schedule - lack of personnel.1/																		
	PROGRESS SECOND HALF:																		
A	2/Quarterly monitoring during Phase II dredging.										X			X			X		
	PROGRESS FIRST HALF: N/A; Phase II dredging postponed until perhaps October 1976; and continuation proposal not yet accepted by Navy.																		
	PROGRESS SECOND HALF:																		
E	2/Semiannual reports on Phase II findings.																		
	PROGRESS FIRST HALF: See #7 above.																		
	PROGRESS SECOND HALF:																		

REMARKS/RESULTS:

1/ Principal investigator of benthic macrofauna subproject resigned September 1975, not yet replaced.

2/ Contingent on Navy's acceptance of a proposal for continuation of monitoring survey.

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX
MAC-069-76-EI-R(01)

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Analysis of gut contents of demersal finfish; studies of natural history, productivity and spoiling effects on important forage species among benthic macrofauna - East Hole		X	—	—	—	—	—	—	—	—	—	—	X					
	1/New London							X	—	—	—	—	—						
	PROGRESS FIRST HALF: Completed on schedule; incorporated into final East Hole report (#4 above). New London - see #7 above.																		
	PROGRESS SECOND HALF:																		
A	1/Prepare manuscript on relationship of spoil disposal to finfish through disposal's effects on food webs.													X	—	—	—	—	—
	PROGRESS FIRST HALF: See #7 above.																		
	PROGRESS SECOND HALF:																		

REMARKS/RESULTS:
1/ Contingent upon Navy's acceptance of a proposal for continuation of monitoring sruvey.

CONTRACT REPORTING FORMAT (OVER $5,000)

TDP Number (full)	Contractor	Amount	From-To (Date) (Asterisk if firm)	Description of Work
MAC-069-77-EI-R-1	New York Ocean Science Lab.	238K	1 July 74-30 June 76	Surveys of physical and chemical oceanography of eastern Long Island Sound, and effects of spoil disposal on same. Also study of an alternate disposal area in Block Island Sound. Parameters investigated include water column currents, temperature, salinity, density, turbidity dissolved oxygen, COD, pH, Eh, suspended and volatile solids; heavy metals in seston, sediments and benthic macrofauna; and demersal finfish distribution. Submit quarterly and final reports.
MAC-069-77-EI-R-1	University of Connecticut	121K	1 July 74-30 June 76	Study effects of dredging on Thames River, Ct. Measuring dredging influence on river's flow characteristics, concentrations of suspended material, organic carbon, and heavy metals; impacts on chlorophyll a concentrations, shellfish pathology and heavy metals levels, and distributions of soil-related fungi. Also using SCUBA to monitor spoil pile and lobster populations at dump site. Quarterly and final reports submitted.

NOAA FORM 52-15A
(4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 08/25/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-069-76-IE-R-1	6B(2)	New STP

6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
R8C204	FB6200	Sandy Hook Laboratory - 162	

10. SUBTASK SUFFIX	11. TASK TITLE
04	Effects of Dredge Spoil Disposal, New London, Connecticut

13. NUMBER OF STP'S	12. SUBTASK TITLE
4	Groundfish Survey - Block Island Sound (Fishers Island)

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*: N/A	A. NAME: Resource Assessment Investigations
B. TOTAL FUNDS	B. END DATE: N/A	
C. SOURCE	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
D. MAN YEARS: .5	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

18. SPECIES	19. LIFE STAGE(S)
Multispecies; demersal finfish	Juvenile and Adult

20. WORK LOCATION	21. PERCENT RECREATIONAL
Block Island Sound (Fishers Island)	50%

22. KEY WORDS
Groundfish Assessment
Distribution and abundance, species composition

23. SUBTASK OBJECTIVES AND METHODOLOGY

onduct second groundfish survey (summer) using standard survey techniques. Complete nd distribute report of second survey. Complete and submit final report.

24. OFFICIAL PREPARING REPORT *(Signature)*

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*

AA FORM 32-15B
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX: MAC-069-76-IE-R-1 (4)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
E	Complete summer groundfish survey. PROGRESS FIRST HALF: Completed on schedule.	X																	
A	Complete preliminary report of second survey. PROGRESS FIRST HALF: Completed on schedule.	X	---	X															
A	Complete final report of first and second survey. PROGRESS FIRST HALF: Completed on schedule. Submitted to Ecosystems Investigation for review.	X	----------	----------	----------	----------	----------	----------	X										

AA FORM 32-15B
741

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TOP NO. PLUS STP SUFFIX

MAC-069-76-IE-R-1(4)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
E	Complete summer groundfish survey. PROGRESS FIRST HALF: Completed on schedule.	X																	
A	Complete preliminary report of second survey. PROGRESS FIRST HALF: Completed on schedule.	X	---	X															
A	Complete final report of first and second survey. PROGRESS FIRST HALF: Completed on schedule. Submitted to Ecosystems Investigation for review.	X	----------	----------	----------	----------	----------	----------	X										

NOAA FORM 32-15A (4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

1. FISCAL YEAR: FY 76

NMFS SUBTASK PLAN

(See Detailed Instructions)

2. DATE PREPARED: August 1975

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

1. TDP NUMBER: MAC-073-76-EI-R-1		4. SUB-OBJECTIVE CODE	5. PRIOR DATE
6. TASK NUMBER: B8C267	7. ORGANIZATION CODE: FB6100	8. FACILITY	9. PRIOR TDP NO. PLUS SUFFIX
10. SUBTASK SUFFIX: 1	11. TASK TITLE: Effect of Temperature on the Behavior of Marine Invertebrates		
13. NUMBER OF STP'S: 1	12. SUBTASK TITLE		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME
B. TOTAL FUNDS	B. END DATE	
C. SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT:
D. MAN YEARS	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

18. SPECIES: Callinectes spaidus	19. LIFE STAGE(S): Adult
20. WORK LOCATION: Sandy Hook Laboratory	21. PERCENT RECREATIONAL: 100%

22. KEY WORDS
Locomotor activity, rhythms, feeding, olfaction, territoriality, aggression, shelter substrate

23. SUBTASK OBJECTIVES AND METHODOLOGY
The principal aim will be to define and measure normal patterns of behavior, including daily activity rhythms, feeding, territoriality, aggression, intra-specific competition and relation to substrate in blue crabs as a means for determining environmental requirements. These data will be used as baseline measures for assessing the effects of sublethal temperature stress.

OFFICIAL PREPARING REPORT *(Signature)*

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*

AA FORM 32-158
741

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TOP NO. PLUS STP SUFFIX: MAC-073-76-EI-R-1 (01)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977				
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
A	Normal activity rhythms in blue crabs, Callinectes sapidus. PROGRESS FIRST HALF: No progress yet; delayed by season. 0%. PROGRESS SECOND HALF:						X											
A	Normal feeding behavior as related to olfactory cues in blue crabs. PROGRESS FIRST HALF: Ahead of schedule. 25%. Preliminary observations have shown that feeding responses in blue crabs may be elicited by various food extracts with the responses showing sufficient stability to indicate that some of these behaviors- PROGRESS SECOND HALF:						X											
A	Normal social interaction, including aggression territoriality and competition for food and space in blue crabs. PROGRESS FIRST HALF: Not scheduled for this reporting period. 0%. PROGRESS SECOND HALF:											X						
A	Normal relation of blue crabs to shelter and substrate. PROGRESS FIRST HALF: Not scheduled for this reporting period. 0%. PROGRESS SECOND HALF:											X						

RESULTS/REMARKS:
1/ may be used to measure stress. Observations of feeding behavior of crabs on natural food fodder organisms are in progress.

NOAA FORM 32-15A
(5-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976
2. DATE PREPARED: 8/26/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

3. TDP NUMBER: MAC-015-76-EI-A-1		4. SUB-OBJECTIVE CODE: IV-A-2	5. PRIOR DATE:
TASK NUMBER: 88C2P8	7. ORGANIZATION CODE: FB6300	8. FACILITY: Milford Laboratory - 163	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-015-75-EI-A-1(0
10. SUBTASK SUFFIX: 01	11. TASK TITLE: Physiological Effects of Pollutant Stress		
13. NUMBER OF STP'S: 3	12 SUBTASK TITLE: Physioecology		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS: 92.8	A. START DATE *(Estimated/Firm)*	A. NAME: Experimental Biology Investigations
TOTAL FUNDS	B. END DATE	
SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Anthony Calabrese
MAN YEARS: 4.0	17 A. COOPERATIVE RESOURCES	17 B. SOURCE
SPECIES: multi-species		19. LIFE STAGE(S): all
WORK LOCATION: Laboratory		21. PERCENT RECREATIONAL

KEY WORDS

bivalves, crustaceans, finfish, exposures, heavy metals, bioassay, pollutants

SUBTASK OBJECTIVES AND METHODOLOGY

Determine the sublethal biological effects of acute and chronic exposures of a variety of known pollutants on the larval, juvenile and adult stages of molluscs, crustaceans, and finfish. These studies will be conducted in close cooperation with Subtasks 88C2P802 and 88C2P803.

SPECIAL PREPARING REPORT (Name)
Anthony Calabrese Investigation Chief
Director of Investigations

NMFS DIRECTOR OR DESIGNATED REPRESENTATIVE (Name)
Carl J. Sindermann

A FORM 32-15B
74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TOP NO. PLUS STP SUFFIX
MAC-015-76-EI-A-1(01

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 19					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Chronic exposure of bivalve molluscs to silver for physiological studies PROGRESS FIRST HALF: On schedule. Exposures and testing of oysters, hard clams and soft-shelled clams completed.	←	-	-	-	-	-	-	-	-	-	-	X						
A	Acute exposure of bay scallop embryos to an array of heavy metals for survival studies PROGRESS FIRST HALF: On schedule. Preliminary tests initiated and more tests will be conducted when embryos become available.	X	-	-	-	-	-	-	-	-	-	X							
A	Acute exposure of oyster and hard clam larvae to an array of heavy metals for survival and growth studies PROGRESS FIRST HALF: On schedule. Tests with oyster larvae completed. Tests with hard clam larvae to be initiated shortly.	←	-	-	-	-	-	-	-	-	-	-	X						
A	Acute exposure of larval lobsters to an array of heavy metals for survival and growth studies PROGRESS FIRST HALF: Tests to be initiated upon availability of lobster larvae.						X	-	-	-	-	-	-	-	-	-	-	-	-
A	Chronic exposure of juvenile lobsters to mercury and cadmium for physiological studies PROGRESS FIRST HALF: On schedule. One test with cadmium completed.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

FORM 32-15B

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STA

MAC-015-76-EI-A-1(C

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

UMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completi of selected operational activities that collectively define the subtask for th 18 month planning period. Connect "x's" with a solid bar. "Events" occu at specific points in time. Indicate these significant achievements by plac an "x" in a single column.

	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 19				
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
A	A chronic exposure of winter flounder to mercury and cadmium for physiological and biochemical studies; initiated FY 75 PROGRESS FIRST HALF: First phase completed. New tests now in progress. Manuscript published	X	-	-	-	-	-	-	-	-	-	-	X					
		(see attached).																
A	Chronic exposure of lobsters to silver for physiological and biochemical studies PROGRESS FIRST HALF: On schedule. Two exposure tests completed.	X	-	-	-	-	-	-	-	-	-	-	X					
M	MS - Effect of cadmium and mercury on lobsters PROGRESS FIRST HALF: Manuscript completed and in Center Review.					X												
1	MS - Effect of cadmium and mercury on striped bass. PROGRESS FIRST HALF: Manuscript completed and in Center Review.			X														
	MS - Effect of metals on Scallop embryos PROGRESS FIRST HALF: None: work not yet completed.													X				

FORM 32-15B

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX
MAC-015-76-EI-A-1(C

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

UMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77				
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
M	MS - Effect of metals on oyster and hard clam larvae PROGRESS FIRST HALF: Work not yet completed.														X			

AA FORM 32-15A
74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 8/26/75

(Submit four copies.)
D: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each.
Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER: MAC-015-76-FI-A-1		4. SUB-OBJECTIVE CODE: IV-A-2	5. PRIOR DATE:
TASK NUMBER: 88C2P8	7. ORGANIZATION CODE: FB6300	8. FACILITY: Milford Laboratory - 163	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-015-75-FI-A-1
SUBTASK SUFFIX: 02	11. TASK TITLE: Physiological Effect of Pollutant Stress		
NUMBER OF STP'S: 3	12 SUBTASK TITLE: Physiological Effects		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS: 65.0	A. START DATE *(Estimated/Firm)*	A. NAME: Experimental Biology Investigations
TOTAL FUNDS	B. END DATE	
SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Anthony Calabrese
MAN YEARS: 3.0	17 A. COOPERATIVE RESOURCES	17 B. SOURCE
SPECIES: multi-species		19. LIFE STAGE(S): all
WORK LOCATION: Laboratory		21. PERCENT RECREATIONAL

KEY WORDS
physiology, bivalves, crustaceans, fish, respiration, oxygen consumption, osmoregulation, metals, pollutants, heart, amino acids

SUBTASK OBJECTIVES AND METHODOLOGY
Determine the sublethal physiological effects of acute and chronic exposures of a variety of known pollutants on the larval, juvenile and adult stages of molluscs, crustaceans, and finfish. These studies will be conducted in close cooperation with Subtasks 88C2P801 and 88C2P803.

SIGNAL FEEDBACK REPORT TO (Name): Anthony Calabrese Investigation Chief

SIGNATURE OF PROJECT LEADER: Carl J. Sindermann

FORM 32-15B

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

FDP NO. PLUS STEP SUFFIX

MAC-015-76-EI-A-1(0

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

UMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NARRATIVE (Brief descriptive phase of activity or event)	Fiscal Year 19 76												Fiscal Year 19				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
Physiological testing of winter flounder (Pseudopleuronectes americanus) after exposure to cadmium and mercury (initiated in FY 75)	<-	-	-	-	-	-	-	-	-	-	-	X					
PROGRESS FIRST HALF: On schedule. First manuscript published and attached. Second exposure series started.																	
Physiological testing of lobsters (Homarus americanus) after chronic exposure to silver.			X	-	-	-	-	-	-	-	-	X					
PROGRESS FIRST HALF: On schedule. Two exposure series completed and respiratory studies conducted.																	
Respiratory studies of bivalves after chronic exposure to silver.	<-	-	-	-	-	-	-	-	-	-	-	X					
PROGRESS FIRST HALF: On schedule. Exposures and testing of oysters, hard clams, and soft-shelled clams completed.																	
Physiological testing of cunners (Tautogolabrus adspersus) after exposure to silver	-	X															
PROGRESS FIRST HALF: Completed. Manuscript in preparation.																	
Physiological testing of larval lobsters (Homarus americanus) after exposure to cadmium and mercury.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PROGRESS FIRST HALF: On schedule. First and second stage larvae tested																	

FORM 32-15B

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP

MAC-015-76-EI-A-1(

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

UMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
Respiratory studies of marine teleosts in swimming speed respirometers after exposure to metals PROGRESS FIRST HALF: On schedule. Studies of striped bass exposed to cadmium initiated.		X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manuscript - Physiological effects of metals on flounder PROGRESS FIRST HALF: Completed. Publication attached.			X														
Manuscript - Physiological effects of metals on lobsters. PROGRESS FIRST HALF: Completed. Manuscript in Center Review.						X											
Manuscript - Physiological effects of metals on bivalves PROGRESS FIRST HALF: On schedule.																	
Manuscript - Physiological effects of metals on striped bass. PROGRESS FIRST HALF: On schedule. Manuscript completed and in Center Review.					X												

A FORM 32-15B
(4)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP SUFFIX
MAC-015-76-FI-A-1(0

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

UMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19___ 1	2	3	4	5	6	7	8	9	10	11	12	Fiscal Year 19___ 1	2	3	4	5
M	Manuscript - Physiological effects of metals on cunners. PROGRESS FIRST HALF: On schedule. Manuscript in preparation							X										
M	Manuscript - Physiological effects of cadmium on chronically exposed rock crabs. PROGRESS FIRST HALF: On schedule. Manuscript in preparation.								X									

A FORM 32-15A
41

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 8/26/75

(Submit four copies.)
: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

DP NUMBER: AC-015-76-EI-A-1		4. SUB-OBJECTIVE CODE: IV-A-2	5. PRIOR DATE:
ASK NUMBER: 8C2P8	7. ORGANIZATION CODE: FB6300	8. FACILITY: Milford Laboratory - 163	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-015-75-EI-A-1
UBTASK SUFFIX: 03	11. TASK TITLE: Physiological Effects of Pollutant Stress		
UMBER OF STP'S: 3	12 SUBTASK TITLE: Biochemical Effects		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
IRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Experimental Biology Investigations
OTAL FUNDS	B. END DATE	
OURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Anthony Calabrese
AN YEARS: 1.0	17 A. COOPERATIVE RESOURCES	17 B. SOURCE
PECIES: ulti-species		19. LIFE STAGE(S): all
ORK LOCATION: aboratory		21. PERCENT RECREATIONAL

EY WORDS
iochemistry, enzymes, transaminase, carbonic anhydrase, hemocyanin, blood, protein, eart, liver, enzymography, gills, molluscs, crustaceans, finfish

BTASK OBJECTIVES AND METHODOLOGY
etermine the sublethal biochemical effects of acute and chronic exposures of a ariety of known pollutants on the larval, juvenile, and adult stages of molluscs, rustaceans, and finfish. These studies will be conducted in close cooperation ith Subtasks 8818C2P801 and 88C2P802.

NAME OF PREPARING REPORT (Author)
Anthony Calabrese Investigation Chief

NAME OF REPORT REVIEWER
Carl J. Sindermann

A FORM 32-158
4)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STEP

MAC-015-76-EI-A-1

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

UMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977				
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
A	Biochemical testing of lobsters (Homarus americanus) after chronic exposure to cadmium and mercury; testing expanded to include antennal gland and gills. PROGRESS FIRST HALF: On schedule. Testing on hearts completed. Testing begun on antennal glands.	←	-	-	-	-	-	-	-	-	-	-	-					
A	Biochemical testing of cunner (Tautogolabrus adspersus) after chronic exposure to cadmium; testing expanded to include skeletal muscle PROGRESS FIRST HALF: On schedule. Testing completed.	←	-	-	-	-	-	-	-	X								
A	Baseline study of transaminase in heart of rock crab (Cancer irroratus) PROGRESS FIRST HALF: This activity has been terminated. Lack of personnel.	←	-	-	-	-	X											
A	Biochemical testing of flounder (Pseudopleuronectes americanus) tissues after chronic exposure to cadmium and mercury; initiated in FY 75 PROGRESS FIRST HALF: On schedule. Testing completed on tissues from animal exposures to date.	←	-	-	-	-	-	-	-	-	-	-	-					
A	Biochemical testing of lobster tissues after chronic exposure to silver PROGRESS FIRST HALF: Tissues taken and frozen-stored. Testing to begin in second half.			X	-	-	-	-	-	-	-	-	-					

FORM 32-159

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

MAC-015-76-EI-A-1(03

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
Manuscript - Biochemical effects of cadmium and mercury on lobster heart PROGRESS FIRST HALF: Manuscript completed, presented at Symposium (Thurberg et al.). Now in Center Review.					X												
Manuscript - Biochemical effects of chronic exposure to cadmium in cunner PROGRESS FIRST HALF: On schedule. In preparation.									X								
Manuscript - Biochemical effects of acute exposure to silver salts in cunner PROGRESS FIRST HALF: On schedule. In preparation.										X							
Manuscript - Biochemical effects of acute exposure to cadmium salts in rock crabs. PROGRESS FIRST HALF: On schedule. In press, Bull. Environ. Contam. and Toxicol.			X														
Manuscript - Biochemical effects of chronic exposure to cadmium salts in rock crabs (extra testing for Physiology) PROGRESS FIRST HALF: On schedule. Statistical evaluation of additional data completed.								X									

FORM 32-158

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TSP NO. PLUS ST...
MAC-015-76-E...

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

...MBER EACH ACTIVITY OR EVENT.

...IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19
	1	2	3	4	5	6	7	8	9	10	11	12	1
Manuscript - Biochemical effects of chronic exposure to cadmium and mercury in striped bass PROGRESS FIRST HALF: Manuscript completed and in Center Review.			X										
Manuscript - Altered kidney enzymes in flounder exposed to cadmium PROGRESS FIRST HALF: Manuscript and technical review completed, presented at Symposium. Now in Center Review.					X								

OAA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: FY 76

2. DATE PREPARED: August 26, 197

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: F25
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each.
Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER: MAC-055-76-IE-R		4. SUB-OBJECTIVE CODE:	5. PRIOR DATE: N/A
TASK NUMBER: 871217	7. ORGANIZATION CODE: FB6100	8. FACILITY: ~~Oxford~~ Milford Laboratory	9. PRIOR TDP NO. PLUS SUFFIX: N/A
SUBTASK SUFFIX: 02	11. TASK TITLE: MESA - NYB Biological Oceanography		
NUMBER OF STP'S: 3	12. SUBTASK TITLE: Environmentally - induced mutagenesis in marine fish		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS: 145.0	A. START DATE *(Estimated/Firm)*: July 1, 1975	A. NAME: Experimental Biology Investigation
TOTAL FUNDS:	B. END DATE: June 30, 1976	
SOURCE: NOAA/MESA	C. CONTRACT/GRANT NUMBER: N/A	B. FOR INFORMATION CONTACT: Dr. James E. Hanks
MAN YEARS: 1.1	17 A. COOPERATIVE RESOURCES: N/A	17 B. SOURCE: N/A

SPECIES: All with pelagic larvae	19. LIFE STAGE(S): Eggs and larvae
WORK LOCATION: New York Bight Apex	21. PERCENT RECREATIONAL: About 50%

KEY WORDS: Mutagenesis, chromosomal aberrations, R/V WESTWARD, ichthyoplankton, fish eggs, fish larvae

SUBTASK OBJECTIVES AND METHODOLOGY

ish eggs from the apex of the New York Bight will be studied cytogenetically for hromosomal aberrations, radiomimetic, and cyto-toxic effects. Eggs from polluted . Y. Bight waters will be compared with eggs from relatively unpolluted waters.

DAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP SUFF.
MAC-055-76-IE-R

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phase of activity or event)	Fiscal Year 19 76												First Year
		1	2	3	4	5	6	7	8	9	10	11	12	1 2 3 4 5
A	Examine mutagenesis in WESTWARD samples	X	-	-	-	X								
	PROGRESS FIRST HALF: More than 3,000 embryos have been removed from their eggs and prepared for cytogenetic study. These slides are now being read and data on 7 embryo stages at most of the 40 sample stations over the New York Bight are being recorded for statistical appraisal. Data collection and slide preparation will be completed on schedule.													
E	Complete paper on WESTWARD samples						X							
	PROGRESS FIRST HALF: The initial study of the Westward data has been put into manuscript form. Center review indicated some of the discussion should be removed from the MESA Technical Report and treated as a separate report. This is being done.													
A	Examine mutagenesis in MACFC 1966-67 samples			X	-	-	-	-	-	-	X			
	PROGRESS FIRST HALF: Will be completed on schedule. Samples were more limited in number than anticipated.													
A	Examine mutagenesis in spring 1976 samples									X	-	-	X	
	PROGRESS FIRST HALF: Cruise being planned.													

OAA FORM 32-153
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP 3.

MAC-055-76-IE-R

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

—NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19				
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
5	A	Develop scoring system of anomalies	X	-	-	-	-	-	-	-	-	-	-	X					
		PROGRESS FIRST HALF: Being done, and final discussion on best procedure to be made soon.																	
		NOTE: This schedule reflects that MESA funding is on a one-year basis.																	

AS FORM 32-15A

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

1. FISCAL YEAR: 1976

NMFS SUBTASK PLAN

(See Detailed Instructions)

2. DATE PREPARED:

(Submit four copies.)
O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-056-76-AO-A-1		9/17/73

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
08E4P1	FB6300	Milford Laboratory - 163	

SUBTASK SUFFIX	11. TASK TITLE
01	Aquacultural Genetics
NUMBER OF STP'S	**12. SUBTASK TITLE**
2	Hybridization and Inbreeding

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME
TOTAL FUNDS	B. END DATE	
SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT:
MAN YEARS	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

SPECIES	19. LIFE STAGE(S)
American oyster and other commerical shellfish	All - from generation to generation
WORK LOCATION	**21. PERCENT RECREATIONAL**
Milford Laboratory	

KEY WORDS

Hybrid, vigor, cross-breeding, inbreeding depression

SUBTASK OBJECTIVES AND METHODOLOGY

To determine and measure effects of inbreeding and any heterosis resulting from cross of inbreds. Use full-sib crosses and hybridize 1st generation inbred lines with one another. To demonstrate commercially useful combinations of traits of different commerical species and any resulting hybrid vigor. In case of many species, methods would have to be developed to overcome genetic incompatibility.

OFFICIAL PREPARING REPORT (Signature): Investigation Chief, Director of Investigations

139

FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature): Carl J. Sindermann

NAA FORM 32-15B
(2-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STAGE

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

MAC-056-77-AO-A-1

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for an 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 19
		1	2	3	4	5	6	7	8	9	10	11	12	1 2 3 4
E	Review literature, recent and older, on genetics and related subjects; and prepare review paper on genetics of bivalve mollusk: Review of Genetic and Related Studies on Commerical Oysters and other Pelecypod Mollusks.	X-	--	-X										
	PROGRESS FIRST HALF: Done. Manuscript in press.		J.	Fish.		Res.			Bd.		Canada			
A	Instruct new geneticist on oyster biology and rearing methods.		X-	-X										
	PROGRESS FIRST HALF: Completed on schedule.													
A	Visits and discussions with commercial hatcheries regarding development of re-initiated program of shellfish genetics at Milford.			X										
	PROGRESS FIRST HALF: Visits were made and discussions held with two commercial hatcheries as planned.													
A	Experiments on modifications of oyster larval rearing methods for genetic and environmental parameter control - density, food, container size.		X-	--	-X									
	PROGRESS FIRST HALF: Completed for the most part, modifications or adjustments for rearing are continually made depending on larval survival and growth.													

DAA FORM 32-153

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. [illegible]

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

MAC-056-77-[illegible]

—NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 19[illegible]			
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
	A	Experiments on modifications of oyster rearing methods for genetic and environmental parameter control - settling material, decreasing density on shells.		X	--	X												
		PROGRESS FIRST HALF: Completed for the most part, modifications and adjustments [illegible] be made if necessary.																
	E	Complete manuscript on cyto-genetics of a deep-water oyster, Hyotissa hyotissa.											X					
		PROGRESS FIRST HALF: Revised plans somewhat due to our material being obtained [illegible] will add to data before completion of manuscript.																
	A	Review of literature on a variety of oyster species and sub-species; collection of such for cross-breeding experimentation with more common commercial types - selection based on literature, experience and private discussions.				X	----	----	----	----	----	----	----	X				
		PROGRESS FIRST HALF: Most of literature has been reviewed, including new publications on speciation in oysters. Contacts have been made for collections of various species for cross-breeding - on schedule.																

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

26. ACTIVITY SCHEDULE AND EVENTS

MAC-056-77-A3-2-1

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19				
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
	A	Foundation crosses for inbreeding tests in the oyster, with experimental cross-breeding of spat from 1st generation sib crosses. Cross-breeding trial on small scale - Emphasis for practical breeding research is to be on selection experiments PROGRESS FIRST HALF: Foundation crosses for inbreeding tests in the oyster have been initiated--in progress, on schedule.						X-	-	-	-	-	-	-					
	A	Cross-breeding experiments on the oyster - between species crosses. PROGRESS FIRST HALF: Should begin soon - slightly behind schedule; awaiting supply of other oyster type for cross-breeding.									X-	-	-	-					
	E	Complete already initiated radiation work on induced parthenogenesis in the oyster; write manuscript. PROGRESS FIRST HALF: Writing of draft completed. Manuscript will be revised and completed due to additional experimentation scheduled.									X-	-	-	X					

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

MAC-056-77-[illegible]

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976 1	2	3	4	5	6	7	8	9	10	11	12	Fiscal Year [illegible] 1	2	3	4
1	A	Consulting services for the aquaculture industry, and for various research groups; training for other laboratories; grant, manuscript reviews as requested PROGRESS FIRST HALF: As indicated.	X-	-	-	-	-	-	-	-	-	-	-	-				

741

NMFS SUBTASK PLAN
(See Detailed Instructions)

1976
2. DATE PREPARED

(Submit four copies.)
O: Director, National Marine Fisheries Service, ATTN: Fx5 National Oceanic and Atmospheric Administration Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER		4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-056-76-AO-A-1			9/17/73
TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
S8E4P1	FB6300	Milford Laboratory - 163	
SUBTASK SUFFIX	11. TASK TITLE		
02	Aquacultural Genetics		
NUMBER OF STP'S	12. SUBTASK TITLE		
2.	Selective Breeding		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME
TOTAL FUNDS	B. END DATE	
SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT:
MAN YEARS	17 A. COOPERATIVE RESOURCES	17 B. SOURCE

SPECIES	19. LIFE STAGE(S)
American oyster and other commerical shell-fish	All - from generation to generation
WORK LOCATION	21. PERCENT RECREATIONAL
Milford Laboratory	

KEY WORDS

Selection response and heritability estimates

SUBTASK OBJECTIVES AND METHODOLOGY

To obtain realized (and theoretical) estimates of selection response for commercial traits. Plan, conduct and demonstrate model selection experiments. Use methods of mass selection, and analysis of full- and half-sib performance.

OFFICIAL PREPARING REPORT (Signature)	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)
Investigation Chief Director of Investigations	Carl J. Sindermann

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

MAC-056-77-[illegible]

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 19[illegible]			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
A	Review literature, recent and older, on genetics and related subjects; and prepare review paper on genetics of bivalve mollusks; Review of Genetic and Related Studies on Commercial Oysters and other Pelecypod Mollusks. PROGRESS FIRST HALF: Done. In press. J. of Fish. Res. Bd. Canada	X-	--	-X													
A	Learning and updating newer methods for oyster rearing PROGRESS FIRST HALF: Completed on schedule.		X-	-X													
A	Visits and discussions with commercial hatcheries regarding development of re-initiated program of shellfish genetics at Milford. PROGRESS FIRST HALF: Visits made as planned.			X													
A	Experiments on modifications of oyster larval rearing methods for genetic and environmental parameter control - density, food, container size. PROGRESS FIRST HALF: Experiments carried out as planned. Modification and improvement of rearing techniques are done periodically as environmental conditions fluctuate.		X-	--	X												

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

26. ACTIVITY SCHEDULE AND EVENTS

MAC-056-77-[illegible]

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NO.	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
A	Experiments on modifications of oyster rearing methods for genetic and environmental parameter control - settling material, decreasing density on shells. PROGRESS FIRST HALF: Experiments carried out as planned. Modification and improve of rearing techniques are done periodically as environmental conditions fluctuate.		X	---	X												
E	Data analyses for rearing experiments, preparation of standardized approach for rearing oysters for selection experiments and heritability analyses. PROGRESS FIRST HALF: Completed on schedule.					X											
A	Plan mass selection experiments and heritability studies on the oyster and condition oysters for breeding work. PROGRESS FIRST HALF: In progress.					X	---	---	---	---	---	---	X				
A	Selection experiments on the oyster - 2-way and random breeding control. PROGRESS FIRST HALF: In progress, have set up 836 adults, carried 45 cultures from 310 successfully spawned animals.							X	---	---	---	---	---	---	---	---	---

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

26. ACTIVITY SCHEDULE AND EVENTS

MAC-056-77-[illegible]

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and [illegible] of selected operational activities that collectively define the subtask for [illegible] 15 month planning period. Connect "x's" with a solid bar. "Events" [illegible] at specific points in time. Indicate these significant achievements by pla[illegible] an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phase of activity or event)	Fiscal Year 1976 1	2	3	4	5	6	7	8	9	10	11	12	Fiscal Year [illegible] 1	2	3	4
A	Heritability experiments on the oyster for commercial characters. PROGRESS FIRST HALF: Experiments postponed two months until natural oyster breeding season is occurring and larvae will be more amenable to laboratory conditions.									X	-	-	-	-	-	-	-
A	Consulting services for the aquaculture industry, and for various research groups; training for other laboratories; grant, manuscript reviews as requested. PROGRESS FIRST HALF: As indicated.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

NMFS SUBTASK PLAN

(See Detailed Instructions)

1976

8/26/76

(Submit four copies.)
To: Director, National Marine Fisheries Service, ATTN: FX5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the current fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER: MAC-057-76-AQ-A-1		4. SUB-OBJECTIVE CODE: 111-A-3	5. PRIOR DATE:
TASK NUMBER: 88E4P2	7. ORGANIZATION CODE: FB6300	8. FACILITY: Milford Laboratory - 163	9. PRIOR TDP NO. PLUS SUFFIX: MAC-057-75-AQ-A-
10. SUBTASK SUFFIX: 01	11. TASK TITLE: Aspects of Nutritional Requirements of Mollusks		
NUMBER OF STP'S: 4	12. SUBTASK TITLE: Laboratory Culture of Marine Micro-algae		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Aquaculture Investigation
TOTAL FUNDS: —	B. END DATE	
SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Ravenna Ukeles
MAN YEARS: 1	17 A. COOPERATIVE RESOURCES	17 B. SOURCE
SPECIES: Multi-species		19. LIFE STAGE(S)
WORK LOCATION: Laboratory		21. PERCENT RECREATIONAL: N/A

KEY WORDS
Nutrients, laboratory culture, axenic culture, culture collection, microscopic marine algae.

SUBTASK OBJECTIVES AND METHODOLOGY
The objectives of this Subtask are to maintain a culture collection of marine microscopic algae under highly defined conditions. These cultures are to serve as a source for in-house experimental work and for Aquaculture Investigators at other institutes. Nutritional variable will be examined for effects on total populations, growth rate, and cell components.

OFFICIAL PREPARING REPORT *(Signature)* Investigation Chief, Director of Investigations	FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)* Carl J. Sindermann

AA[illegible] 32-158
-76-

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

FOR NO. PLUS [illegible]

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

MAC-057-76-AQ-A-[illegible]

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and complet[illegible] of selected operational activities that collectively define the subtask for [illegible] 18 month planning period. Connect "x's" with a solid bar. "Events" [illegible] at specific points in time. Indicate these significant achievements by p[illegible] an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year [illegible]			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	[illegible]
A	Maintenance of cultures of the collection on natural sea water medium PROGRESS FIRST HALF: On schedule.	X-	-	-	-	-	-	-	-	-	-	-	X	X-	-	-	-
A	Maintenance of cultures on artificial sea water medium PROGRESS FIRST HALF: On schedule.	X-	-	-	-	-	-	-	-	-	-	-	X	X-	-	-	-
A	Maintenance of specially adapted strains, eg. vitamin free, high salinity PROGRESS FIRST HALF: On schedule.	X-	-	-	-	-	-	-	-	-	-	-	X	X-	-	-	-
A	Purification of contaminated strains PROGRESS FIRST HALF: N/A							X-	-	-	-	-	X				
A	Study of factors affecting phytoplankton productivity in laboratory culture PROGRESS FIRST HALF: On schedule. Studies on significance of vitamins and and trace metals in progress.	X-	-	-	-	-	-	-	-	-	-	X-	-	-	-	-	-

AN FORM 32-158
/74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

EDP NO. PLUS STEP 1.1

MAC-057-76-AQ-A-1

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
E	Expansion of collection by acquisition of new strains PROGRESS FIRST HALF: No progress.						X	-	-	-	-	-	X				
A	Investigate methods for the long-term storage and preservation of culture species PROGRESS FIRST HALF: On schedule. Some experiments have shown long-term storage for 6-8 months of stock cultures is possible. Other studies in progress.	X	-	-	-	-	-	-	-	-	-	-	X				
A	Study physiological aspects of phytoplankton growth PROGRESS FIRST HALF: N/A									X	-	-	-	-	-	-	-
A	Study of nutritional aspects of phytoplankton growth PROGRESS FIRST HALF: N/A									X	-	-	-	-	-	-	-

NA FORM 32-15A (4)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

1. FISCAL YEAR: 1976

NMFS SUBTASK PLAN

(See Detailed Instructions)

2. DATE PREPARED: 8/26/75

(Submit four copies.)
): Director, National Marine Fisheries Service, ATTN: Fx5 National Oceanic and Atmospheric Administration Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

DP NUMBER: MAC-057-76-AQ-A-1		4. SUB-OBJECTIVE CODE: 111-A-3	5. PRIOR DATE:
ASK NUMBER: 38E4P2	7. ORGANIZATION CODE: FB6300	8. FACILITY: Milford Laboratory - 163	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-057-75-AQ-A-1 (02
SUBTASK SUFFIX: 02	11. TASK TITLE: Aspects of Nutritional Requirements of Molluscs		
NUMBER OF STP'S: 4	12. SUBTASK TITLE: Mass Cultivation of Marine Micro-Algae		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Aquaculture Investigations
TOTAL FUNDS	B. END DATE	
OURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Ravenna Ukeles
AN YEARS: 1/2	17 A. COOPERATIVE RESOURCES	17 B. SOURCE
PECIES: ulti-species		19. LIFE STAGE(S)
ORK LOCATION: aboratory		21. PERCENT RECREATIONAL: N/A

EY WORDS
Mass culture, phytoplankton foods, growth media

UBTASK OBJECTIVES AND METHODOLOGY

ne objective of this Subtask is to cultivate large volumes of microscopic algae a service to other investigations in experimental biology that are in need of od sources for rearing animals. At the same time improvements in the present stem of mass culture of algae will be sought.

FFICIAL PREPARING REPORT (Signature): Investigation Chief Director of Investigations	22. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature): Carl [illegible]

OAA FORM 32-159
(3-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

FOR NO. [illegible]

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NAC-057-76-AQ-A

—NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year
			1	2	3	4	5	6	7	8	9	10	11	12	1 2 3 4
	E	Advise and consult with industry personnel on improving food production methods in aquaculture.	X	—	—	—	—	X							
		PROGRESS FIRST HALF: On schedule. Visits made to Long Island hatcheries to observe general operations and consult on problems.													
	A	Maintenance of mass culture systems of algae for laboratory food production	X	—	—	—	—	—	—	—	—	—	—	—	
		PROGRESS FIRST HALF: On schedule. Carboy cultures and open tank cultures maintained to provide a continuous algal food supply to Milford Laboratory.													
	A	Improvement of productivity and harvest systems						X	—	—	—	—	—	X	
		PROGRESS FIRST HALF: Improve harvest system and productivity of tank cultures so that large volumes of larval foods, in addition to juvenile foods, are available.													
	A	Evaluate best cost efficiency for algal food products.									X	—	—	—	
		PROGRESS FIRST HALF: N/A													

FORM 32-15A

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

1976

NMFS SUBTASK PLAN

(See Detailed Instructions)

2. DATE PREPARED: 8/26/75

(Submit four copies.)
To: Director, National Marine Fisheries Service, ATTN: FX5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the current fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER: MAC-057-76-AQ-A-1		4. SUB-OBJECTIVE CODE:	5. PRIOR DATE:
TASK NUMBER: 8E4P2	7. ORGANIZATION CODE: FB6300	8. FACILITY: Milford Laboratory-163	9. PRIOR TDP NO. PLUS SUFFIX: MAC-057-75-AQ-A-1
SUBTASK SUFFIX: 03	11. TASK TITLE: Aspects of Nutritional Requirements of Mollusks		
NUMBER OF STP'S: 4	12. SUBTASK TITLE: Experiments in Molluskan Nutrition		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Aquaculture Investigation
TOTAL FUNDS	B. END DATE	
SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Ravenna Ukeles
MAN YEARS: 1/2	17 A. COOPERATIVE RESOURCES	17 B. SOURCE
SPECIES		19. LIFE STAGE(S)
WORK LOCATION		21. PERCENT RECREATIONAL

KEY WORDS

Larvae nutrition, diets axenic culture, phytoplankton foods

SUBTASK OBJECTIVES AND METHODOLOGY

The objective of this Subtask is to develop appropriate systems for critical studies of nutritional requirements of bivalve larvae and to evaluate various diets of both living and non-living food material.

OFFICIAL PREPARING REPORT *(Signature)*: Investigation Chief
Director of Investigations

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*: Carl Sunderman

DAA FORM 32-158
-73)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. [illegible]

MAC-057-76-AQ-[illegible]

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

ACTIVITY OR EVENT	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1[illegible]			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
A	Conduct studies on techniques for obtaining axenic molluscan larvae for utilization in nutrition studies.	X	—	—	—	—	—	—	—	—	—	—	X				
	PROGRESS FIRST HALF: On schedule - work developing techniques was halted for 3 mo due to lack of spawnable animals. Work is continuing since on technique developme																
A	Conduct studies on feeding efficiency at different stages of the life cycle (dependent on #1)									X	—	—	—	—	—	—	—
	PROGRESS FIRST HALF: N/A																
A	Experiment with utilization of living foods - natural conditions				X	—	—	—	—	—	—	—	—	—	—	—	—
	PROGRESS FIRST HALF: On schedule. Utilization of 3 species of algae as food experimented with provided new data. Experiments are in progress to show effect of introducing a new species of food. After initial feedings; also on effects of artificial seawater.																
A	Experiment with utilization of non-living foods natural conditions										X	—	—	—	—	—	—
	PROGRESS FIRST HALF: N/A																

FORM 32-15A

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1976

2. DATE PREPARED: 8/26/75

(Submit four copies.)
: Director, National Marine Fisheries Service, ATTN: F45
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

DP NUMBER: MAC-057-76-AQ-A-1		4. SUB-OBJECTIVE CODE: 111-A-3	5. PRIOR DATE:
ASK NUMBER: 88E4P2	7. ORGANIZATION CODE: FB6300	8. FACILITY: Milford Laboratory	9. PRIOR TDP NO. PLUS SUFFIX: MAC-057-75-AQ-A-1
SUBTASK SUFFIX: 04	11. TASK TITLE: Aspects of Nutritional Requirements of Mollusks		
UMBER OF STP'S: 4	12. SUBTASK TITLE: Effect of Pollutants on Cultivation of Micro-Algae		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
IRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Aquaculture Investigation
OTAL FUNDS	B. END DATE	
OURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Ravenna Ukeles
AN YEARS: 1/2	17 A. COOPERATIVE RESOURCES	17 B. SOURCE
PECIES: Multi-species		19. LIFE STAGE(S)
ORK LOCATION: aboratory		21. PERCENT RECREATIONAL: N/A

KEY WORDS

ollutants, laboratory culture, phytoplankton, salinity, selenium, lithium

UBTASK OBJECTIVES AND METHODOLOGY

he objective of this Subtask is to determine the effects of selected pollutants phytoplankton growth in laboratory cultures to provide guidelines for cological management.

FFICIAL PREPARING REPORT *(Signature)*: Investigation Chief
Director of Investigations

24. THE DIRECTOR OR DESIGNATED PERSONNEL (S

OAA FORM 32-158
-79

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
76. ACTIVITY SCHEDULE AND EVENTS

FOR NOS. PROJ. ...

MAC-056-76-A?-A-1

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" are at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

ACTIVITY OR EVENT	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19_76												Fiscal Year 19_			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
A	Investigate effects of selenium in algal growth					X	-	-	-	-	-	-	X				
	PROGRESS FIRST HALF: On schedule. Previous work is being reviewed before continuation of experiments.																
A	Investigate effects of lithium on algal growth					X	-	-	-	-	-	-	X				
	PROGRESS FIRST HALF: On schedule. Previous work is being reviewed before continuation of experiments.																
E	Survey of literature on effects of pollutants on microscopic marine algae									X	-	-	X				
	PROGRESS FIRST HALF: N/A																

AA FORM 32-13A
(74)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976
2. DATE PREPARED: 8/19/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER: C-058-76-LS-A-1	4. ~~SUBT~~ OBJECTIVE CODE: IV-A-2	5. PRIOR DATE: 10/25/74
TASK NUMBER: 3E4P3	7. ORGANIZATION CODE: FB6400	8. FACILITY: 163
		9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-058-75-AQ-A-1 (01)
SUBTASK SUFFIX: 01	11. TASK TITLE: Aquaculture - Control of Diseases	
NUMBER OF STP'S: 1	13. SUBTASK TITLE: Diseases of Larval Mollusks	

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS: A	A. START DATE *(Estimated/Firm)*	A. NAME: Pathobiology Investigations
TOTAL FUNDS: A	B. END DATE	
SOURCE: FS	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield
MAN YEARS	17 A. COOPERATIVE RESOURCES	17 B. SOURCE: N/A
SPECIES: Mollusks (bivalves)		19. LIFE STAGE(S): Larval and juvenile
WORK LOCATION: National and laboratory		21. PERCENT RECREATIONAL: N/A

KEY WORDS
Diseases of larval mollusks (mortality, pathology)

SUBTASK OBJECTIVES AND METHODOLOGY

Utilizing conventional and newly developed bacteriologic techniques, isolate and identify pathogens in cultures of bivalve mollusks. Develop physical methods (including sterilization) for the elimination of microbial pathogens and toxins. Provide consultative services to industry and Sea Grant institutions involved in aquaculture.

22. OFFICIAL PREPARING REPORT *(Signature)* Alan Rosenfield for W. Blogoslawski	23. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)* Paul T. Sandeman

A FORM 32-15B
4)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP SUFFIX
MAC-058-76-AQ-A-1
(01)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

UMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Isolate suspected microbial pathogens from laboratory and hatchery cultures of larval bivalves. PROGRESS FIRST HALF: On schedule, 75% complete. Examined 131 suspected shellfish pathogens isolated from Federal and commercial shellfish hatcheries.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
E	Assemble data on number and types of microbial isolates obtained from hatchery or laboratory cultures. PROGRESS FIRST HALF: On schedule, 60% complete. Data assembly to identify shellfis pathogen proceeding as scheduled.									X-	-	-	-	-	-	-	-	X	
A	Monitor pilot shellfish hatchery to learn basic water parameters which change before and after disease conditions occur. PROGRESS FIRST HALF: Behind schedule, 20% complete. Monitoring pilot hatchery to observe water parameter changes during disease conditions behind schedule. Slippage due to lack of monies for chemical analysis of seawater before, during, and after hatchery disease occurrence.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X		
A	Provide consultative services to Sea Grant universities and industrial institutions engaged in aquaculture research. PROGRESS FIRST HALF: On schedule; 65% complete. Consultation with commercial and Sea Grant institutions to assist in preventing shellfish larval disease on schedule with site visits to 7 east coast hatcheries and 6 west coast facilities.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X

FORM 32-153

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX
MAC-058-76-AQ-A-1
(01)
(Cont.)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
Assess utility of ozonization and other physical or chemical treatment of seawater for larval molluscan disease prophylaxis	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	
PROGRESS FIRST HALF: On schedule; 60% complete. Assessment of various chemical-physical treatments of seawater for disease prophylaxis on schedule as planned.																		
Assemble and evaluate data from 5A above.												X-	-	-	-	-	-	X
PROGRESS FIRST HALF: On schedule; 40% complete. Data evaluation proceeding on schedule.																		
Prepare manuscript on evaluation of ozonization and other physical or chemical treatments of seawater for larval disease prophylaxis.																		X
PROGRESS FIRST HALF: On schedule; 40% complete. Manuscript preparation evaluating ozonization and other physical-chemical treatments for larval disease prophylaxis proceeding on schedule with event # 6.																		
Assess value of ozonization to inactivate or depurate mollusks known to have ingested Gonyaulax.	X-	-	-	-	-	-	-	-	-	-	X							
PROGRESS FIRST HALF: Slightly behind schedule; 90%. Inactivation of PSP by ozonized seawater completed but demonstration depuration of PSP contaminated mollusks slipping slightly.																		
Prepare publication on ozone deupuration of shellfish contaminated by Gonyaulax.									X									
PROGRESS FIRST HALF: Slightly behind schedule; 90%. Completion of depuration manuscript depend on completion of activity 8.																		

FORM 32-153

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS SUFFIX
MAC-058-76-AQ-A-1
(01)
(Cont.)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 1977					
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
Conduct studies to determine pathogenesis of known bacterial disease agents to hatchery reared bivalve larvae	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
PROGRESS FIRST HALF: On schedule, 30% complete.	Pathogens isolated. Exposure system																	
being developed.																		

NMFS SUBTASK PLAN

(See Detailed Instructions)

1976

2. DATE PREPARED: 8/26/75

(Submit four copies.)
To: Director, National Marine Fisheries Service, ATTN: F45
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

1. TDP NUMBER: MAC-059-76-AQ-A-1		4. SUB-OBJECTIVE CODE: III-A-3	5. PRIOR DATE: 10/24/74
6. TASK NUMBER: 8E4P4	7. ORGANIZATION CODE: FB6300	8. FACILITY: Milford Laboratory - 163	9. PRIOR TDP NO. PLUS SUFFIX: MAC-059-75-AQ-A-
SUBTASK SUFFIX: 01	11. TASK TITLE: Spawning and Rearing of Molluscs		
NUMBER OF STP'S: 2	12. SUBTASK TITLE: Culture Methods for the Bay Scallop		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME: Experimental Biology Investigations
TOTAL FUNDS	B. END DATE	
SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Warren S. Landers
MAN YEARS: 1.0	17 A. COOPERATIVE RESOURCES	17 B. SOURCE
SPECIES: Bay scallop		19. LIFE STAGE(S): all
WORK LOCATION: Laboratory		21. PERCENT RECREATIONAL

KEY WORDS: Culture, bay scallop

SUBTASK OBJECTIVES AND METHODOLOGY

Expand present methods for ripening and spawing bay scallops. Develop methods for rearing the larvae to metamorphosis on a large scale. Develop methods for rearing post-set scallops to the field transplant stage. Standard molluscan culture techniques will be used and refined to meet the needs of this species.

OFFICIAL PREPARING REPORT *(Signature)* Investigation Chief Director of Investigations	29. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)

DAA FORM 32-15B
-741

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STEP NO.
MAC-059-76-AQ-A-1

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and complet of selected operational activities that collectively define the subtask for 18 month planning period. Connect "x's" with a solid bar. "Events" occ at specific points in time. Indicate these significant achievements by pl an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
A	Develop year round methods for ripening and spawning the bay scallops PROGRESS FIRST HALF: On schedule. Developed conditioning procedures that resulted in ripe scallops from May through November	X-	-	-	-	-	-	-	-	-	-	-	-X				
A	Develop rearing method for bay scallop larvae PROGRESS FIRST HALF: On schedule. Reared numerous batches of larvae to metamorphosis, usually with prophylactic antibiotic treatment.	X-	-	-	-X								X-	-	-	-	-
A	Investigate metamorphosis and immediate survival of the bay scallop set PROGRESS FIRST HALF: On schedule. Static antibiotic-treated cultures better than flowing or recirculated ones.		X-	-	-	-X								X-	-	-	-
A	Growth of post-set bay scallops in the hatchery PROGRESS FIRST HALF: On schedule. Flowing culture systems were superior to static and recirculating systems.			X-	-	-	-	-	-	-	-	-	-	-	-	-	-
A	Initiate growth studies of bay scallops in a tank farm facility													X-	-	-	-

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS SFP SUFFIX
MAC-059-76-AQ-A-1(

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

—NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and complet of selected operational activities that collectively define the subtask for th 18 month planning period. Connect "x's" with a solid bar. "Events" occu at specific points in time. Indicate these significant achievements by plac an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19				
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
6	E	Significant progress in year round gametogenesis in the bay scallop												X					
7	E	Basic methodology for rearing bay scallop larvae demonstrated																	

NA FORM 32-15A
(7-71)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1976

2. DATE PREPARED: 8/26/75

(Submit four copies.)
O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER		4. SUB-OBJECTIVE CODE	5. PRIOR DATE
MAC-059-76-AQ-A-1		III-A-3	10/24/74
TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
88E4P4	FB6300	Milford Laboratory - 163	MAC-059-75-AQ-A-1 (
. SUBTASK SUFFIX	11. TASK TITLE		
02	Spawning and Rearing of Molluscs		
. NUMBER OF STP'S	12. SUBTASK TITLE		
2	Culture Methods for the Surf Clam		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
. DIRECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME
. TOTAL FUNDS	B. END DATE	Experimental Biology Investigations
. SOURCE	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Warren S. Landers
. MAN YEARS 1.0	17 A. COOPERATIVE RESOURCES	17 B. SOURCE.
. SPECIES Surf clam		19. LIFE STAGE(S) all
. WORK LOCATION Laboratory		21. PERCENT RECREATIONAL

. KEY WORDS

Culture, surf clam

SUBTASK OBJECTIVES AND METHODOLOGY

Expand present methods for ripening and spawning surf clams. Develop dependable methods for rearing surf clam larvae and post-set young. Develop grow-out facility for rearing surf clam juveniles to market size. Standard molluscan culture methods will be tested and modified to meet the requirements of surf clam developmental stage.

OFFICIAL PREPARING REPORT *(Signature)*
Investigation Chief
Director of Investigations

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann

OAA FORM 32-15B
-741

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS

MAC-059-76-AQ-A-

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

—NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and comp of selected operational activities that collectively define the subtask for 18 month planning period. Connect "x's" with a solid bar. "Events" at specific points in time. Indicate these significant achievements by pl an "x" in a single column.

NUMBER	A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year			
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
	A	Develop method for ripening surf clams during the winter PROGRESS FIRST HALF: On schedule. Cold-shock treatment to stimulate gametogenesis in early winter underway.						X	-	-	- X							
	A	Final assessment of culture methodology for rearing surf clam larvae PROGRESS FIRST HALF: On schedule. All rearing data compiled. Evaluation underway.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	X	
	A	Develop controls for fouling organisms on post-set clams PROGRESS FIRST HALF: On schedule. Epizootics of post-set clams controlled through use of ultraviolet irradiation.			X	-	-	X				X	-	-	-	-	-	
	A	Assessing growth of juvenile surf clams in a tank PROGRESS FIRST HALF: On schedule. Data for 18 months shows growth equal to natural populations at Chincoteague, Virginia.	X	-	-	-	X					X	-	-	-	-	-	
	E	Successful ripening of surf clams during the winter									X							

OAA FORM 32-15B
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

FOR NO. PLAN STEP

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

MAC-059-76-AQ-A-1

-NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 1			
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4
E	Paper on culture method for surf clam larvae																
E	Fouling on post-set clams controlled															X	
E	Preliminary data on growth of surf clams to market in a tank farm																

NMFS SUBTASK PLAN

(See Detailed Instructions)

1976

2. DATE PREPARED: 8/19/75

(Submit four copies.)
O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER: MAC-016-76-LS-A-1		4. ~~STP~~ OBJECTIVE CODE: II-E-3	5. PRIOR DATE: 10/25/74
TASK NUMBER: 8SC2Q2	7. ORGANIZATION CODE: FB6400	8. FACILITY: 164	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-016-75-LS-A-1 (00)
SUBTASK SUFFIX: 01	11. TASK TITLE: Life Studies - Comparative Pathobiology		
NUMBER OF STP'S: 4	12. SUBTASK TITLE: Molluscan Pathobiology		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS: N/A	A. START DATE *(Estimated/Firm)*	A. NAME: Pathobiology Investigations
TOTAL FUNDS: N/A	B. END DATE	
SOURCE: NMFS	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield
MAN YEARS: 2	17 A. COOPERATIVE RESOURCES	17 B. SOURCE: N/A

SPECIES: Oysters, clams, mussels (bivalves)	19. LIFE STAGE(S): Juvenile and adult
WORK LOCATION: Laboratory and nationally	21. PERCENT RECREATIONAL: N/A

KEY WORDS: Diseases of mollusks (mortality, pathology -- oysters, clams, mussels)

SUBTASK OBJECTIVES AND METHODOLOGY

Conduct ultrastructural studies on mollusk neoplasms. Utilizing electron microscopy describe morphology and cytopathology of oyster papovavirus. Determine the presence of microparasites in domestic and exotic mollusks.

OFFICIAL PREPARING REPORT *(Signature)*	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*

NOAA FORM 32-159
(-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX
MAC-016-76-LS-A-1
(01)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

No.	Type	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
1	A	Provide diagnostic services in mollusks to State, Federal agencies, universities and industry.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
		PROGRESS FIRST HALF: On schedule. Diagnostic services were provided for 17 differe organizations. A report was submitted to each describing any parasites or pathology observed. Continuing service.																		
2	A	Conduct histological examination of Korean oysters on a quarterly and, if available, on a monthly basis	X-	-	-	-	-	-	-	-	-	-	-	X						
		PROGRESS FIRST HALF: On schedule, 60% complete. Samples fixed in Korea have been examined on a monthly basis. No quarterly live samples have been received. No new Minchinia infections have been found.																		
		Funds 299 pers. 0bc 4th																		
3	M	Prepare publications relative to diagnostic services and Korean oyster studies.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
		PROGRESS FIRST HALF: On schedule, 100% complete. Manuscript entitled "Sporulation of Minchinia sp. (Haplosporida, Haplosporidiidae) in the Pacific oyster Crassostrea gigas (Thunberg) from the Republic of Korea" accepted for publication in J. Protozoo																		
	A	Collect sea scallops from along the mid-Atlantic shelf and Baltimore Cannon and examine histologically for parasites and pathology.		X-	-	-	-	-	-	-	-	-	-	X						
		PROGRESS FIRST HALF: On schedule, 100% complete. Scallops were collected from 19 locations and processed for examination. Due to inadequate fixation no significant results were obtained from the histological examination.																		

FORM 32-153

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP SUFFIX
MAC-016-76-LS-A-1
(01)
(Cont.)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NARRATIVE (Brief descriptive phase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
Examine surf clams from waters off the coast of Maryland and Virginia to determine seasonality and prevalences of parasitic nematodes.	X	-	-	-	-	-	-	-	-	-	-	X						
PROGRESS FIRST HALF: On schedule, 80% complete. A full year's data have been collec Worm infections in clams from Virginia averaged 30%; only 2% of the Maryland clams were infected.																		
Prepare publications relative to histopathology of nematode infections in the surf clam.	X	-	-	-	-	-	-	X										
PROGRESS FIRST HALF: On schedule, 25% complete. Distribution data presented with Lichtenfels et al., Trans. Am. Microsc. Soc. (in press). Histological data in draft form.																		
Prepare publication on microcell disease										X	-	-	X					
PROGRESS FIRST HALF: Not scheduled for this reporting period.																		
Prepare review paper			X	-	-	X												
PROGRESS FIRST HALF: On schedule, 100% complete. A manuscript entitled "Prolifera disorders in bivalve mollusks" has been prepared for publication in Marine Fisheries Review.																		
Prepare ultrastructural pathology paper			X	-	-	X												
PROGRESS FIRST HALF: Behind schedule, 80% complete. A manuscript entitled "Histolo and ultrastructural pathology of papillomavirus infections in the oyster *Crassostre virginica* is in preparation.																		

-74)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

1. FISCAL YEAR: 1976

NMFS SUBTASK PLAN

(See Detailed Instructions)

2. DATE PREPARED: 8/19/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER: MAC-016-76-LS-A-1		4. SUB-OBJECTIVE CODE: II-E-3	5. PRIOR DATE: 10/25/74
TASK NUMBER: SSC202	7. ORGANIZATION CODE: FB6400	8. FACILITY: 164	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-016-75-LS-A-1 (01)
SUBTASK SUFFIX: 02	11. TASK TITLE: Life Studies - Comparative Pathobiology		
NUMBER OF STP'S: 4	12. SUBTASK TITLE: Crustacean Pathobiology		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS: N/A	A. START DATE *(Estimated/Firm)*	A. NAME: Pathobiology Investigations
TOTAL FUNDS: N/A	B. END DATE	
SOURCE: NMFS	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield
MAN YEARS: 1	17 A. COOPERATIVE RESOURCES	17 B. SOURCE: N/A

SPECIES: rabs, lobsters, shrimps, prawns	19. LIFE STAGE(S): Juvenile and adult
WORK LOCATION: itionally and laboratory	21. PERCENT RECREATIONAL: N/A

KEY WORDS

seases of crustaceans (mortality, pathology--crabs, lobsters, shrimps, prawns)

SUBTASK OBJECTIVES AND METHODOLOGY

determine pathology of virus-infected and Paramoeba-infected blue crabs, and
thology of shrimp with lesions of the exoskeleton, collected in the N.Y. Bight.
provide a practical atlas of histology of the normal blue crab. The above
be investigated through histological and histochemical techniques. To investigate
the laboratory, transmission and course of infection of a virus and of Paramoeba
the blue crab.

OFFICIAL PREPARING REPORT *(Signature)* Phyllis T. Johnson	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)* Carl J. Sindermann

NOAA FORM 32-15B (4-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

FDP NO. PLUS STEP SUFFIX
MAC-016-76-LS-A-1
(02)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

	ACTIVITY	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
		Virus diseases of blue crabs (Reovirus, herpes-like virus, other probable virus infections)																		
1	A	Attempted isolation of infectious agent (Reovirus) and infection of normal crabs in laboratory	X-	--	--	--	X						X-	--	--	--	--	X		
		PROGRESS FIRST HALF: On schedule. 75% complete. A reovirus has been isolated and frozen for transmission attempts next summer. Plan change - Completed. A herpeslike virus has been isolated and transmitted in the laboratory by feeding of infected (co																		
2	E	Preparation of manuscript on histopathology and virus morphology (herpeslike virus)	X-	--	X															
		PROGRESS FIRST HALF: Completed. A paper titled "A herpeslike virus from the blue crab Callinectes sapidus," scheduled for publication June 1976 in J. Invertebr. Path.																		
3	A	Surveillance of virus diseases through sampling and examination of tissues	X-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X
		PROGRESS FIRST HALF: On schedule. 50% complete. Fall crab survey completed and tissues evaluated. Plan change - In spring-summer surveys will concentrate on a herpeslike virus.																		
	E	Preparation of manuscript on known geographical and seasonal distribution and histopathology (Reovirus)							X-	--	--	--	X							
		PROGRESS FIRST HALF: On schedule. 90% complete. A paper titled "A viral disease of the blue crab, Callinectes sapidus: histopathology and differential diagnosis" is essentially complete except for preparation of illustrations.																		

A FORM 32-15B
(4)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP SUFFIX
MAC-016-76-LS-A-1
(02)
(Cont.)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
	Paramoeba disease of blue crab																		
A	Attempted infection experiments in laboratory	X	-	-	-	-	X					X	-	-	-	-	-	X	
	PROGRESS FIRST HALF: Completed. Paramoeba has been transmitted in the laboratory by inoculation of infected hemolymph and course and pathology of these laboratory infections determined.																		
E	Preparation of manuscript on histopathology and other aspects of the disease					X	-	-	-	-	X								
	PROGRESS FIRST HALF: Behind schedule. 40% complete. All data assembled. Completion of paper will be 1 month late since all tissues could not be prepared by the histology unit for examination in time.																		
	Skeletal erosion in shrimp from NY Bight																		
A	Continue monthly sampling in search of abnormal animals	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
	PROGRESS FIRST HALF: Behind schedule. Due to lack of personnel and boat time to perform necessary collections, no progress has been made. Plan change - Project to be dropped.																		
	Normal histology of blue crab																		
A	Analysis of data, preparation of written and illustrative material	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
	PROGRESS FIRST HALF: On schedule (no estimate of % completed possible at this time). Illustrative material and outlined data available for several organ systems of intermolt crab.																		

Remarks/Results:
1A 1st half cont. - tissue and by inoculation of infected hemolymph.

AA FORM 32-15A
74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 8/19/75

(Submit four copies.)
O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER: MAC-016-76-LS-A-1		4. ~~ACT~~ OBJECTIVE CODE: II-E-3	5. PRIOR DATE: 2/7/75
TASK NUMBER: 3C2Q2	7. ORGANIZATION CODE: FB6400	8. FACILITY: 164	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-016-75-LS-A-1 (02)
SUBTASK SUFFIX: 03	11. TASK TITLE: Life Studies - Comparative Pathobiology		
NUMBER OF STP'S: 4	12. SUBTASK TITLE: Fish Pathobiology		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS: N/A	A. START DATE *(Estimated/Firm)*	A. NAME: Pathobiology Investigations
TOTAL FUNDS: N/A	B. END DATE	
SOURCE: NMFS	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield
MAN YEARS: 1	17 A. COOPERATIVE RESOURCES	17 B. SOURCE: N/A

SPECIES: in fish	19. LIFE STAGE(S): Juvenile and adult
WORK LOCATION: aboratory	21. PERCENT RECREATIONAL: N/A

KEY WORDS: iseases of fish (mortality, pathology - fish)

SUBTASK OBJECTIVES AND METHODOLOGY

oloying mainly the techniques of histopathology, to study naturally occurring and perimentally induced diseases of marine commercial and sport fishes. Determination the causes of mortalities under natural and cultured conditions and the possible hal and sublethal effects of introduced contaminants will be primary objectives.

OFFICIAL PREPARING REPORT *(Signature)*	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*

FORM 32-158

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX
MAC-016-76-LS-A-1
(03)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Histopathology of chronic sublethal contaminant exposures on marine gamefish (striped bass)	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
	PROGRESS FIRST HALF: On schedule. Continuing activity. Additional specimens currently being exposed at Milford Lab.																		
E	Prepare report on histopathology of 90-day exposures of striped bass to cadmium and mercury							X											
	PROGRESS FIRST HALF: Complete. Report sent to Milford Lab.																		
A	Diseases of stressed and captive fish	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
	PROGRESS FIRST HALF: Behind schedule. Delayed because of unscheduled activities.																		
E	Prepare report on histopathology of "puffy snout" disease						X												
	PROGRESS FIRST HALF: Behind schedule, 25% complete. Additional specimens being processed and examined. Many specimens which were received were inadequately fixed and were unusable.																		
E	Prepare note on cryptobiosis of summer flounder								X										
	PROGRESS FIRST HALF: Behind schedule, 75% complete. Rough draft prepared.																		

AA FORM 32-15B
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP SUFFIX
MAC-016-76-LS-A-1
(03)
(Cont.)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

ACTIVITY OR EVENT	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 19_77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Histopathology of spinning disease of menhaden	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
	PROGRESS FIRST HALF: Behind schedule. Delayed because of unscheduled activities. Anticipate completion early in FY 1978.																		
E	Collect specimens from 1976 mortalities												X						
	PROGRESS FIRST HALF: On schedule. No mortalities aniticipated until end of May.																		
E	Complete processing of specimens collected during 1975							X											
	PROGRESS FIRST HALF: Behind schedule, 50% complete. Several specimens still require dissection, embedding, and sectioning.																		
E	Complete microscopic examination of specimens collected during 1975										X								
	PROGRESS FIRST HALF: Behind schedule, 50% complete. All specimens have not yet been processed.																		
E	Complete electron microscopic examination of specimens collected during 1975											X							
	PROGRESS FIRST HALF: On schedule, 75% complete. Examination confirms presence of CNS lesions in moribund fish.																		

NA FORM 32-15A
74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 8/19/75

(Submit four copies.)
D: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER: MAC-016-76-LS-A-1		4. ~~TASK~~ OBJECTIVE CODE: II-E-3	5. PRIOR DATE: 10/25/74
TASK NUMBER: 88C2Q2	7. ORGANIZATION CODE: FB6400	8. FACILITY: 164	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-016-75-LS-A-1 (03)
SUBTASK SUFFIX: 04	11. TASK TITLE: Life Studies - Comparative Pathobiology		
NUMBER OF STP'S: 4	12. SUBTASK TITLE: Histological Services		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS: N/A	A. START DATE *(Estimated/Firm)*	A. NAME: Pathobiology Investigations
TOTAL FUNDS: N/A	B. END DATE	
SOURCE: NMFS	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield
PLAN YEARS: 2	17 A. COOPERATIVE RESOURCES	17 B. SOURCE: N/A

SPECIES: Fish, crustacean, mollusks	19. LIFE STAGE(S): Larval, juvenile, adult
WORK LOCATION: International, national, laboratory	21. PERCENT RECREATIONAL: N/A

KEY WORDS

Diseases of fish, crustaceans, and mollusks (mortality, pathology)

SUBTASK OBJECTIVES AND METHODOLOGY

To prepare all histological materials for the Comparative Pathobiology task (blocking, sectioning, staining).

OFFICIAL PREPARING REPORT *(Signature)*: Aaron Rosenfield

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*: Carl J. Sindermann

A FORM 32-158
(4)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX
MAC-016-76-LS-A-1
(04)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Process and prepare samples and specimen materials for histological examination	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
	PROGRESS FIRST HALF: 100% complete. All activities proceeding on schedule.																		
A	Prepare periodic reports, manuals, instruction sheets on 1A above for inhouse use and for use by interested research and industrial organizations	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
	PROGRESS FIRST HALF: 100% complete. All activities proceeding on schedule.																		

AA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 8/19/75

(Submit four copies.)
O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER: MAC-017-76-IE-A-1		4. SUB-OBJECTIVE CODE: IV-A-3	5. PRIOR DATE: 10/25/74
TASK NUMBER: 88C2P9	7. ORGANIZATION CODE: FB6400	8. FACILITY: 164	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-017-75-IE-A-1 (00)
SUBTASK SUFFIX: 01	11. TASK TITLE: Disease and Environmental Stress		
NUMBER OF STP'S: 5	12. SUBTASK TITLE: Fin Rot Disease in the New York Bight		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS: N/A	A. START DATE *(Estimated/Firm)*	A. NAME: Pathobiology Investigations
TOTAL FUNDS: N/A	B. END DATE	
SOURCE: NMFS	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield
MAN YEARS: 2	17 A. COOPERATIVE RESOURCES	17 B. SOURCE: N/A

SPECIES: uke and winter flounder	19. LIFE STAGE(S): Juveniles and adult
WORK LOCATION: boratory and New York Bight	21. PERCENT RECREATIONAL: N/A

KEY WORDS

n rot, fin erosion, diseases of fish

SUBTASK OBJECTIVES AND METHODOLOGY

e objective is to determine the prevalence and pathogenesis of fin rot disease in nter flounder (and summer flounder) from the New York Bight. Methodology consists trawl surveys, entrapment studies, and histopathological examination of diseased sh.

OFFICIAL PREPARING REPORT *(Signature)*: Robert Murchelano

25. MD DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*: Carl J. Sindermann

FORM 32-15B

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP SUFFIX
MAC-017-76-IE-A-1
01

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

UMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
Conduct gross and microscopic studies on the course of fin rot disease in laboratory-held flounder	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X		
PROGRESS FIRST HALF: Behind schedule, 20% complete. Because of other activities and scarcity of suitable fish, few laboratory-held winter flounder were available for gross and microscopic study. Renewed effort will be made during the spring, summer(																		
Prepare manuscript on #1																X		
PROGRESS FIRST HALF: Behind schedule, 0% complete. Studies in progress; no manuscript anticipated until October 1976.																		
Monitor incidence of fin rot disease in summer flounder from Sandy Hook/Raritan Bay and Great Bay, N. J.	X-	-	-	-	-	X												
PROGRESS FIRST HALF: Complete. Incidence of fin rot disease in summer flounder from Sandy Hook/Raritan Bay, N.J., appears to increase from May to November. No summer flounder with fin rot present in Great Bay, N.J.																		
Prepare manuscript on #3						X												
PROGRESS FIRST HALF: Complete. Manuscript prepared and in press (ASLO Special Symposium, The Middle Atlantic Continental Shelf and New York Bight).																		
Conduct entrapment studies with winter flounder in sewage sludge area of the NY Bight	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X		
PROGRESS FIRST HALF: On schedule, 50% complete. Entrapment studies are in progress and will continue through October of 1976. Results to date indicate that the condition of fish placed in traps at the sewage sludge site is worse than that (cont.																		

A FORM 32-15B

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX
MAC-017-76-IE-A-1
01

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

(Cont.)

UMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

ACTIVITY	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Conduct histologic studies of normal epidermis from winter, summer, and windowpane flounder			X-	-	-	-	X											
	PROGRESS FIRST HALF: Behind schedule, 50% complete. All tissues have been blocked sectioned, and stained, and presently are being examined microscopically.																		
A	Monitor fin rot disease prevalence in pound and fyke net catches from Sandy Hook/Raritan Bays	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X		
	PROGRESS FIRST HALF: Behind schedule, 0% completed. No activity because of inability to obtain personnel.																		
E	Collate and analyze data from #7																	X	
	PROGRESS FIRST HALF: Behind schedule, 0% complete. No activity because of inability to obtain data.																		

Remarks/Results:
1A cont. - and fall of CY 1976. Studies not scheduled for completion until October 1976.
5A cont. - of fish in traps at the control site.

A FORM 32-15A
41

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 8/19/75

(Submit four copies.)
: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

DP NUMBER :-017-76-IE-A-1		4. ~~SUB~~-OBJECTIVE CODE IV-A-3	5. PRIOR DATE 10/25/75
ASK NUMBER :2P9	7. ORGANIZATION CODE FB6400	8. FACILITY 163	9. PRIOR TDP NO. PLUS STP SUFFIX MAC-017-75-IE-A-1 (01)
UBTASK SUFFIX	11. TASK TITLE Disease and Environmental Stress		
UMBER OF STP'S	12. SUBTASK TITLE Immunity in Marine Fish		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
IRECT FUNDS 'A	A. START DATE *(Estimated/Firm)*	A. NAME Pathobiology Investigations
OTAL FUNDS 'A	B. END DATE	
OURCE IFS	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield
AN YEARS	17 A. COOPERATIVE RESOURCES	17 B. SOURCE N/A
PECIES ish		19. LIFE STAGE(S) Adult
ORK LOCATION aboratory		21. PERCENT RECREATIONAL N/A

EY WORDS
mmunity, disease, infection

UBTASK OBJECTIVES AND METHODOLOGY

Determine whether pollution reduces immunity to bacterial disease agents in fish (b) attempt to link fish diseases to raised serum antibody titers against specific teria. This will be accomplished by examination of antibody response and cellular enses of fish in environmental and laboratory settings. A variety of immunological cytochemical tests will be applied to analyze fish immune systems under synergistic ess of pollutants and exposure to bacterial pathogens.

FICIAL PREPARING REPORT *(Signature)*
Jan Rucinski for R. Robohm

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*
Carl J. Sindermann

FORM 22-158

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STEP SUFFIX
MAC-017-76-IE-A-1
(01)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
First draft on serum antibody response to bacteria in N.Y. Bight and Great Bay fish				X														
PROGRESS FIRST HALF: Behind schedule, 50% complete due to difficult statistical analysis, additional work on bacteria (see remarks 1) and time spent retraining student aid.																		
First draft on identification and pathogencity of Vibrio ulcer disease agent in flounder					X													
PROGRESS FIRST HALF: Behind schedule, 20% complete due to time spent in retraining student aid and press of other work.																		
First draft on effects of cadmium on immunity in cunners						X												
PROGRESS FIRST HALF: Behind schedule, 40% complete because additional data were required; time also spent retraining student aid.																		
Examine the role of cadmium in causing immune defects in peritoneal phagocytes of striped bass[2]	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
PROGRESS FIRST HALF: On schedule, 50% complete. A series of light and electron microscopic cell preparations from fish treated with cadmium and bacteria are present being evaluated.																		
First draft on in vivo and in vitro effects of cadmium on peritoneal phagocytes of striped bass[2]																		X
PROGRESS FIRST HALF: Nothing is scheduled to be written until more data are in.																		

FORM 32-153

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STEP SUFFIX
MAC-017-76-IE-A-1
(01)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

(Cont.)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD. Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
Develop improved methodology for detection of bacteria and antibody in fish							X-	-	-	-	-	-	-	-	-	-	-	X
PROGRESS FIRST HALF: Behind schedule, 5% complete; experimental design has been developed; however, scheduling of work may need to be delayed due to press of other activities.																		
Examine fin rot diseased flounder for evidence of lymphocytic auto-immunity									X-	-	-	X						
PROGRESS FIRST HALF: Anticipate completion on schedule.																		
Collect preliminary data on effects of heavy metals on lymphocytic immunity in striped bass[2]							X-	-	-	-	-	-	-	-	-	-	-	X
PROGRESS FIRST HALF: On schedule, 20% complete. Accomplishments include preliminary evidence that serum globulin output from cadmium-damaged lymphocytes may be impaired.																		

Remarks/Results:

[1] A new block of work was added in order to make better use of untrained student aid. API and Minitek rapid systems for identification of bacteria were evaluated on isol from fin-rot diseased fish. Work is complete except for statistical evaluation and correlation of results with a cooperative investigator.

[2] Cooperative work with Dr. Joel Bodammer of Oxford.

AA FORM 32-15A
-74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 8/19/75

(Submit four copies.)
TO: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER: AC-017-76-IE-A-1		4. ~~SUB~~-OBJECTIVE CODE: IV-A-3	5. PRIOR DATE: 10/25/75
TASK NUMBER: 3C2P9	7. ORGANIZATION CODE: FB6400	8. FACILITY: 164	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-017-75-IE-A-1 (02)
SUBTASK SUFFIX: 5	11. TASK TITLE: Disease and Environmental Stress		
NUMBER OF STP'S:	12. SUBTASK TITLE: Microfauna of fish, crustaceans, and mollusks		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS: N/A	A. START DATE *(Estimated/Firm)*	A. NAME: Pathobiology Investigations
TOTAL FUNDS: N/A	B. END DATE	
SOURCE: NMFS	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield
MAN YEARS	17 A. COOPERATIVE RESOURCES	17 B. SOURCE: N/A

SPECIES: fish, crustaceans, mollusks	19. LIFE STAGE(S): Juvenile and adult
WORK LOCATION: laboratory	21. PERCENT RECREATIONAL: N/A

KEY WORDS

amoebae, ciliates, microfauna, parasites, protozoa -- fish, crustaceans, mollusks

SUBTASK OBJECTIVES AND METHODOLOGY

Isolate and indentify protozoa in water column and sediment from sites in N.Y. Bight microscopic observation of organisms present in samples. (2) Identify organisms associated with "gill fouling" in Crustacea from N.Y. Bight by studying stained gills histologic sections. (3) Determine prevalence of sporozoan parasites in blood tissues of Atlantic mackerel. (4) Investigate role of protozoa in diseases of cultured billfish larvae by isolating organisms from water and tissues.

OFFICIAL PREPARING REPORT *(Signature)*

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*

A FORM 32-15B
74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STP SUFFIX
MAC-017-75-IE-A-1
(02)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NO.	A/E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
	A	Prepare manuscript on identity & distribution of marine amoebae in NY Bight apex PROGRESS FIRST HALF: On schedule. Identifications complete. "Key to Marine Amoebae of N.E. United States" in final revision.	X	-	-	-	-	-	-	-	-	-	-	-	X					
	A	Investigate distribution of Paramoeba in tissues of lobster & rock crab PROGRESS FIRST HALF: On schedule. Paramoeba positively identified in both hosts. Manuscript in preparation.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
	E	Publish descriptions of 20 species of marine amoebae PROGRESS FIRST HALF: Completed. Four manuscripts published.			X															
	A	Collate and summarize data on gill fouling and discoloration in benthic crustaceans PROGRESS FIRST HALF: On schedule. Gills from over 800 animals processed for histology. Analysis in progress to determine seasonal variations.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
	A	Compare species diversity of ciliate protozoa on gills of crustaceans from Sandy Hook Bay and NY Bight apex PROGRESS FIRST HALF: On schedule. Two species of suctorians and 3 of peritrichs found on crab or lobster gills. Incidence varies with molting cycles of hosts. One manuscript in review.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X

AA FORM 32-15B
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

FDP NO. PLUS STP SUFFIX
MAC-017-75-IE-A-1
(02)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

(Cont.)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

ACT	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977				
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
E	Determine prevalence of Myxosporidan cysts in heart of bluefish in Chesapeake Bay PROGRESS FIRST HALF: Complete. Parasite present in 25% of fish examined. Manuscript in preparation.			X														
A	Describe blood and tissue sporozoan parasites in mackerel from Chincoteague Bay, Virginia PROGRESS FIRST HALF: On schedule. Blood sporozoan and tissue coccidian description in progress (M.S. thesis - S. A. MacLean)	X	-	-	-	-	-	-	-	-	-	-	-	X				
E	Determine ultrastructural morphology of bacteria which foul gills of rock crabs PROGRESS FIRST HALF: On schedule. At least 3 species of bacteria present in abundance on gills of crabs. Manuscript in preparation.		X															
A	Identify protozoa associated with algae and oysters in aquaculture systems PROGRESS FIRST HALF: On schedule. Large populations of aquatic protozoa found in unhealthy culture of shellfish. Small populations and small species diversity associated with healthy cultures.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
A	Coordinate taxonomic studies on nematodes associated with surf clams PROGRESS FIRST HALF: On schedule. Studies are essentially complete and a NOAA circular is to be published which contains separate manuscripts prepared by each investigator. A 30-day survey for nematodes is scheduled for April 1975.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X

AA FORM 32-15A
74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 8/19/75

(Submit four copies.)
O: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

TDP NUMBER	4. OBJECTIVE CODE	5. PRIOR DATE
C-017-76-IE-A-1	IV-A-3	10/25/75

TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY	9. PRIOR TDP NO. PLUS STP SUFFIX
C2P9	FB6400	164	MAC-017-75-IE-A-1 (03)

SUBTASK SUFFIX	11. TASK TITLE
	Disease and Environmental Stress
NUMBER OF STP'S	12. SUBTASK TITLE
	Ultrastructural studies of normal and physiologically stressed crabs, fish, and mollusks

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS: A	A. START DATE *(Estimated/Firm)*	A. NAME: Pathobiology Investigations
TOTAL FUNDS: A	B. END DATE	
OURCE: FS	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield
AN YEARS	17 A. COOPERATIVE RESOURCES	17 B. SOURCE: N/A

PECIES	19. LIFE STAGE(S)
sh, crabs, mollusks	Juvenile and adult
ORK LOCATION	21. PERCENT RECREATIONAL
oratory	

EY WORDS

ology, electron microscopy, ultrastructure, cytopathology -- fish, crabs, mollusks

UBTASK OBJECTIVES AND METHODOLOGY

ilizing conventional ultrastructural procedures of fixation, embedment, and ctioning, normal and pathologic tissues of blue crabs, winter flounder, striped ss, and mackerel will be studied with the electron microscope. In addition to amining animals having naturally occurring diseases, experiments involving experi-ntal procedures in pathology and immunology will also be employed to augment certain udies.

FFICIAL PREPARING REPORT *(Signature)*

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*

A FORM 32-15B
(4)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TOP NO. PLUS STP SUFFIX
MAC-017-76-IE-A-1
(03)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Evaluate data on the ultrastructure of the hemopoietic tissue in the blue.	X-	--	--	X														
	PROGRESS FIRST HALF: Complete. Electron microscope images recorded for blue crab hemopoietic tissues at various stages of intermolt.																		
M	Prepare manuscript on #1						X												
	PROGRESS FIRST HALF: Behind schedule, 0% complete. Manuscript to be incorporated as part II of a definitive study on blood related tissues in the blue crab.																		
A	Conduct fine structural studies on the cytology and cytopathology of Paramoeba perniciosa in the blue crab.			X-	--	--	X												
	PROGRESS FIRST HALF: Behind schedule, 10% complete. Time frame for this study changed in order to advance studies 5A and 6M listed below.																		
M	Prepare manuscript on #3									X									
	PROGRESS FIRST HALF: Behind schedule, 0% complete. New estimate for manuscript preparation is October 1976.																		
	Collect and evaluate morphological data on the gills and other tissues obtained from rock crabs captured in the New York Bight	X-	--	--	--	--	--	--	--	--	--	--	X						
	PROGRESS FIRST HALF: Ahead of schedule, 100% complete. The necessary tissues to complete this preliminary investigation have been collected and evaluated with the scanning and transmission electron microscope.																		

AA FORM 32-158
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP SUFFIX
MAC-017-76-1E-A-1
(03)
(Cont.)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
M	Prepare a manuscript on #5																		X
	PROGRESS FIRST HALF: Ahead of schedule, 0% complete. Electron microscope images for paper now being selected. Manuscript to be prepared in collaboration with Dr. T. K. Sawyer. Estimated date of completion May 1976.																		
M	Prepare a manuscript on a previously reported virus in the blue crab (Johnson and Bodammer, 1975) detailing more completely the fine structural cytopathology inherent in this disease.												X						
	PROGRESS FIRST HALF: No report required until second half of time period.																		
A	Continue to collect and evaluate, with the scanning and transmission electron microscope, normal and diseased fin tissues from winter flounder captured in the New York Bight	X	-	-	-	-	X												
	PROGRESS FIRST HALF: Complete. Studies of fin tissues from normal and disease winter flounder have been completed, and a preliminary report of these results has been given. Selected specimens are being studies further in anticipation of the (cont.																		
M	Prepare a manuscript on #8												X						
	PROGRESS FIRST HALF: No report required until the second half of time period.																		
A	Conduct laboratory experiments on fin rot disease, utilizing abiotic reagents as possible initiators of fin erosion										X	-	-	-	-	-	-	-	X
	PROGRESS FIRST HALF: No report required until the second half of time period.																		

AA FORM 32-15B
(74)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP SUFFIX
MAC-017-76-1E-A-1
(03)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

(Cont.)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

A OR E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	
E	Complete study of peripheral blood cells and hemopoietic tissues from the striped bass						X												
	PROGRESS FIRST HALF: Behind schedule, 50% complete. Inadequate preservation of striped bass hemopoietic tissues necessitates the collection of more fish this spring (April-June 1976) before this study can be completed. Electron microscopic studies																		
M	Prepare manuscript on #11									X									
	PROGRESS FIRST HALF: Behind schedule, 0% complete. Estimated date of completion will depend upon the availability of new specimens (see 11 above) and whether attempts to adequately preserved this material are successful.																		
A	*Conduct in vivo and in vitro experiments on immunologically significant cells from normal and cadmium exposed striped bass. A combined immunological and cytological study.			X	-	-	-	-	-	-	-	-	-	-	-	X			
	PROGRESS FIRST HALF: On schedule. Experiments are being conducted on an average of one every two months in order to have the time required to analyze the results and avoid repetitive errors. This study is being augmented by electrophoretic (Cont.)																		
M	*Preparation of manuscripts on #13																		X
	PROGRESS FIRST HALF: No report required during 1st or 2nd time periods.																		

Remarks/Results:

*Investigation in collaboration with Dr. Richard A. Robohm, Milford Laboratory
SA cont.-manuscript preparation indicated below.
11E cont. - of the blood are finished.
13A cont. - analysis of serum proteins.

NA FORM 32-15A
/41

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976

2. DATE PREPARED: 8/19/75

(Submit four copies.)
): Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

DP NUMBER: C-017-76-IE-A-1		4. ~~SUB~~-OBJECTIVE CODE: IV-A-3	5. PRIOR DATE: 10/25/75
ASK NUMBER: C2P9	7. ORGANIZATION CODE: FB6400	8. FACILITY: 164	9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-017-75-IE-A-1 (04)
SUBTASK SUFFIX: 5	11. TASK TITLE: Disease and Environmental Stress		
UMBER OF STP'S: 5	12. SUBTASK TITLE: Registry of Marine Pathology		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
IRECT FUNDS: A	A. START DATE *(Estimated/Firm)*	A. NAME: Pathobiology Investigations
OTAL FUNDS: A	B. END DATE	
OURCE: FS	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield
AN YEARS	17 A. COOPERATIVE RESOURCES	17 B. SOURCE: N/A

PECIES: sh, crustaceans, mollusks	19. LIFE STAGE(S): Larval, juvenile, adult
ORK LOCATION: oratory	21. PERCENT RECREATIONAL: N/A

EY WORDS

ease, mortality, pathology -- fish, crustaceans, mollusks

UBTASK OBJECTIVES AND METHODOLOGY

establish, collect, catalogue, maintain, and provide curatorial and custodial service a continuing basis for a permanent national Registry of Marine Pathology, consisting type specimens, photographs, and published literature relating to pathology in ine and estuarine poikilotherms. Accessions will be gathered by solicitation from scientific community and registry materials will be available for study by lified scientific and technical workers.

FFICIAL PREPARING REPORT *(Signature)*

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*

A 1 FORM 32-15B
4)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX
MAC-017-76-IE-A-1
(04)

UMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

ACTIVITY OR EVENT	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 76												Fiscal Year 19 77					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Review and revise policy and methodology PROGRESS FIRST HALF: Continuing but hindered by difficulty of convening suitable advisory or governing board. Efforts toward that end will be emphasized.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
A	Assemble and improve physical facilities PROGRESS FIRST HALF: Continuing, but behind schedule because of need for microscope and associated viewing facilities.					X-	-	-	-	-	-	-	-	-	-	-	-	-	X
E	Prepare, publish, and distribute announcement and questionnaire PROGRESS FIRST HALF: On schedule. Announcement and questionnaire have been publish and widely distributed among pathologists and biologists including medical and veterinary researchers.	X-	-	-	-	X													
A	Prepare first catalogue PROGRESS FIRST HALF: On schedule and completed	X-	-	-	-	X													
A	Publish first catalogue PROGRESS FIRST HALF: Behind schedule because of demands on typist and need for decision on method of reproduction.					X													

A FORM 32-15B
4)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STEP SUFFIX
MAC-017-76-1E-A-1
(04)
(Cont.)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

UMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

ACTIVITY	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A	Solicit contributions from scientific community PROGRESS FIRST HALF: Ahead of schedule. Information regarding the Registry has been widely dispersed through the scientific community and response has been generally favorable and enthusiastic.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
A	Receive and catalogue new accessions PROGRESS FIRST HALF: On schedule. Accessions have been entered and catalogued as received.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
A	Visit related facilities and confer with their personnel PROGRESS FIRST HALF: None, because of press of other duties. Efforts will be made to visit other related facilities during forthcoming period.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
E	Conduct second annual review PROGRESS FIRST HALF: Not pertinent.														X				

A FORM 32-15A
U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN

(See Detailed Instructions)

1. FISCAL YEAR: 1976
2. DATE PREPARED: 8/19/75

(Submit four copies.)
: Director, National Marine Fisheries Service, ATTN: Fx5
National Oceanic and Atmospheric Administration
Washington, D.C. 20235

FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP.
If a Task is conducted at two or more facilities *(Sandy Hook and Oxford, for example)* then the task segments at each facility are at least one Subtask each. Each contract or grant in excess of $2,500 is a separate Subtask.

DP NUMBER :- 058-76-LS-A-1		4. ~~SUBT~~ OBJECTIVE CODE IV-A-2	5. PRIOR DATE 10/25/74
SK NUMBER :4P3	7. ORGANIZATION CODE FB6400	8. FACILITY 163	9. PRIOR TDP NO. PLUS STP SUFFIX MAC-058-75-AQ-A-1 (01)
UBTASK SUFFIX 01	11. TASK TITLE Aquaculture - Control of Diseases		
UMBER OF STP'S 1	12. SUBTASK TITLE Diseases of Larval Mollusks		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
RECT FUNDS	A. START DATE *(Estimated/Firm)*	A. NAME Pathobiology Investigations
OTAL FUNDS	B. END DATE	
URCE S	C. CONTRACT/GRANT NUMBER	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield
N YEARS	17 A. COOPERATIVE RESOURCES	17 B. SOURCE N/A
ECIES ollusks (bivalves)		19. LIFE STAGE(S) Larval and juvenile
RK LOCATION ational and laboratory		21. PERCENT RECREATIONAL N/A

Y WORDS
eases of larval mollusks (mortality, pathology)

BTASK OBJECTIVES AND METHODOLOGY

izing conventional and newly developed bacteriologic techniques, isolate and identify opathogens in cultures of bivalve mollusks. Develop physical methods (including ization) for the elimination of microbial pathogens and toxins. Provide consultative ices to industry and Sea Grant institutions involved in aquaculture.

FICIAL PREPARING REPORT *(Signature)*
Ann Rosefield for W. Blogoslawski

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE *(Signature)*

FORM 32-15B

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TOP NO. PLUS STP SUFFIX
MAC-058-76-AQ-A-1
(01)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 1977				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
Isolate suspected microbial pathogens from laboratory and hatchery cultures of larval bivalves.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-X
PROGRESS FIRST HALF: On schedule, 75% complete. Examined 131 suspected shellfish pathogens isolated from Federal and commercial shellfish hatcheries.																	
Assemble data on number and types of microbial isolates obtained from hatchery or laboratory cultures.									X-	-	-	-	-	-	-	-	-X
PROGRESS FIRST HALF: On schedule, 60% complete. Data assembly to identify shellfish pathogen proceeding as scheduled.																	
Monitor pilot shellfish hatchery to learn basic water parameters which change before and after disease conditions occur.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	
PROGRESS FIRST HALF: Behind schedule, 20% complete. Monitoring pilot hatchery to observe water parameter changes during disease conditions behind schedule. Slippage due to lack of monies for chemical analysis of seawater before, during, and after hatchery disease occurrence.																	
Provide consultative services to Sea Grant universities and industrial institutions engaged in aquaculture research.	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-X
PROGRESS FIRST HALF: On schedule; 65% complete. Consultation with commercial and Sea Grant institutions to assist in preventing shellfish larval disease on schedule with site visits to 7 east coast hatcheries and 6 west coast facilities.																	

FORM 32-153

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

TDP NO. PLUS STEP SUFFIX
MAC-058-76-AQ-A-1
(01)

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

(Cont.)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 1976												Fiscal Year 19_7				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
Assess utility of ozonization and other physical or chemical treatment of seawater for larval molluscan disease prophylaxis	X-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
PROGRESS FIRST HALF: On schedule; 60% complete. Assessment of various chemical-physical treatments of seawater for disease prophylaxis on schedule as planned.																	
Assemble and evaluate data from 5A above.												X-	-	-	-	-	-
PROGRESS FIRST HALF: On schedule; 40% complete. Data evaluation proceeding on schedule.																	
Prepare manuscript on evaluation of ozonization and other physical or chemical treatments of seawater for larval disease prophylaxis.																	
PROGRESS FIRST HALF: On schedule; 40% complete. Manuscript preparation evaluating ozonization and other physical-chemical treatments for larval disease prophylaxis proceeding on schedule with event # 6.																	
Assess value of ozonization to inactivate or depurate mollusks known to have ingested Gonyaulax.	X-	-	-	-	-	-	-	-	-	-	X						
PROGRESS FIRST HALF: Slightly behind schedule; 90%. Inactivation of PSP by ozonized seawater completed but demonstration depuration of PSP contaminated mollusks slipping slightly.																	
Prepare publication on ozone depuration of shellfish contaminated by Gonyaulax.									X								
PROGRESS FIRST HALF: Slightly behind schedule; 90%. Completion of depuration manuscript depend on completion of activity 8.																	

FORM 32-153

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NMFS SUBTASK PLAN
26. ACTIVITY SCHEDULE AND EVENTS

TDP NO. PLUS STP SUFFIX
MAC-058-76-AQ-A-1
(01)
(Cont.)

NUMBER EACH ACTIVITY OR EVENT.

IDENTIFY BY ENTERING "A" FOR ACTIVITY OR "E" FOR EVENT.

PLANNING PERIOD Indicate by entering an "x" the beginning and completion of selected operational activities that collectively define the subtask for the 18 month planning period. Connect "x's" with a solid bar. "Events" occur at specific points in time. Indicate these significant achievements by placing an "x" in a single column.

NARRATIVE (Brief descriptive phase of activity or event)	Fiscal Year 19 76												Fiscal Year 1977				
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5
Conduct studies to determine pathogenesis of known bacterial disease agents to hatchery reared bivalve larvae	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PROGRESS FIRST HALF: On schedule, 30% complete.	Pathogens isolated. Exposure system being developed.																