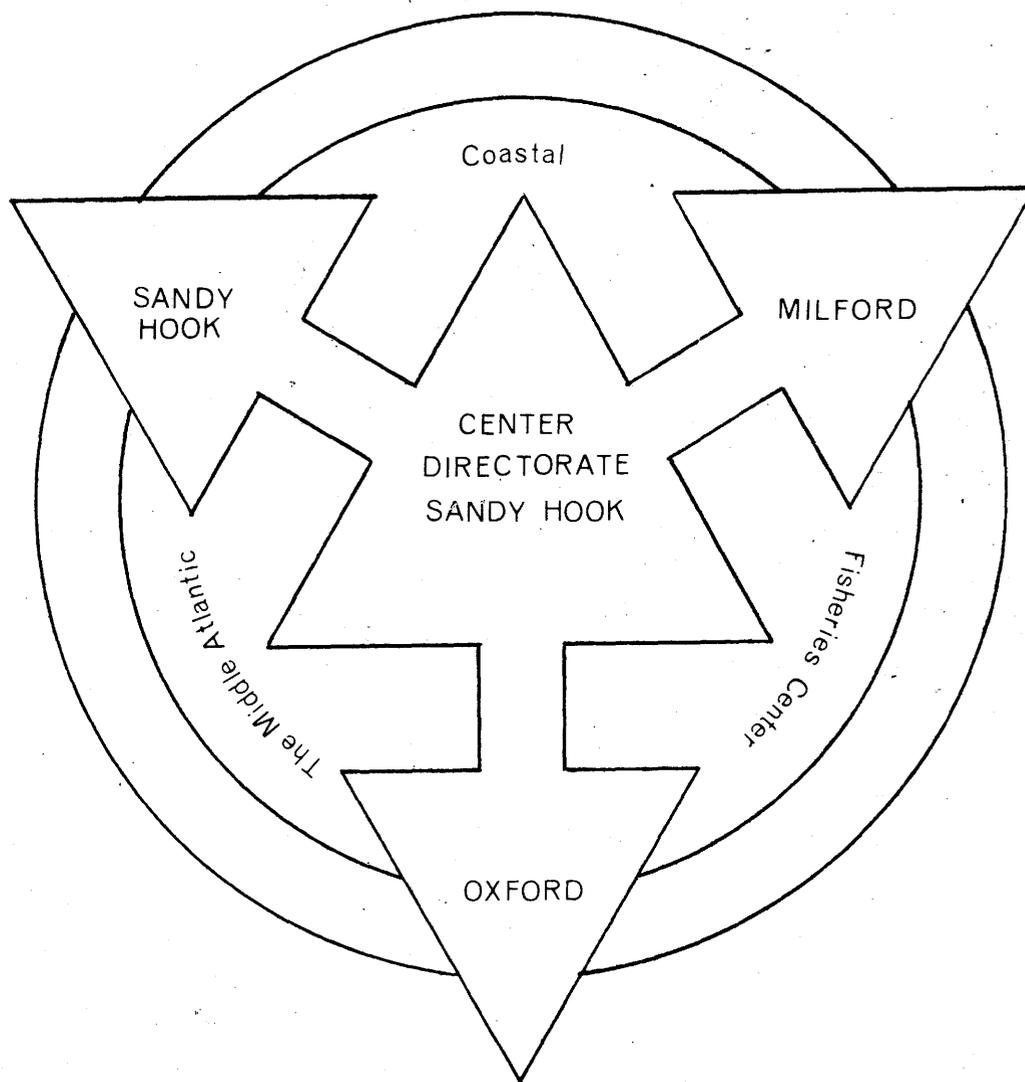




U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Northeast Region

MIDDLE ATLANTIC COASTAL FISHERIES CENTER



SUB-TASK DEVELOPMENT PLAN - FY 1975

Informal Report No. 41

October 1974

1975

## NMFS SUBTASK PLAN

(See Detailed Instructions)

10/25/74

(Submit four copies.)

TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235FMC'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-002-75-S2-A-1

4. SUB-OBJECTIVE CODE

II-C-2

5. PRIOR DATE

10/10/73

6. TASK NUMBER

8812P1

7. ORGANIZATION CODE

FB6200

8. FACILITY

MACFC-162

9. PRIOR TDP NO. PLUS STP  
SUFFIX

MA02-74 (01)

10. SUBTASK SUFFIX

01

11. TASK TITLE

MARMAP II: Multispecies, Middle Atlantic Bight

11. NUMBER OF STP'S

11

12. SUBTASK TITLE

Groundfish Assessment: Autumn Cruise - FY 75

14. RESOURCES

15. CONTRACT/GRANT INFO.

16. PERFORMING ORGANIZATION

A. DIRECT FUNDS

19.7

A. START DATE (Estimated/Firm)

N/A

A. NAME

Resource Assessment Investigations

B. TOTAL FUNDS

N/A

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

Multi-species: Demersal finfishes

19. LIFE STAGE(S)

Juvenile, Adult

20. WORK LOCATION

Middle &amp; South U. S. Atlantic Coast

21. PERCENT RECREATIONAL

50%

22. KEY WORDS

Groundfish Assessment  
Distribution and abundance  
Species composition

23. SUBTASK OBJECTIVES AND METHODOLOGY

Plan and coordinate fall cruise. Complete cruise, including distribution of special samples (species intensity, contaminant, water, plankton) and complete and distribute cruise report. Complete data processing and store in MACFC and NEFC data banks (includes hand processing, keypunching, audit corrections and listings). Prepare summary cruise report for user needs in cooperation with NEFC. Develop assessment analysis capabilities with cooperation of NEFC.

24. OFFICIAL PREPARING REPORT (Signature)

Arthur S. Merrill

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)

Carl Suderman



IOAA FORM 32-15A (4-74)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION		1. FISCAL YEAR 1975	
<b>NMFS SUBTASK PLAN</b> (See Detailed Instructions)				2. DATE PREPARED 10/25/74	
(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 ( <i>Sandy Hook and Oxford, for example</i> ) 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-002-75-S2-A-1		4. SUB-OBJECTIVE CODE II-C-2		5. PRIOR DATE 10/10/73	
6. TASK NUMBER 8812P1	7. ORGANIZATION CODE FB6200	8. FACILITY MACFC - 162	9. PRIOR TDP NO. PLUS STP SUFFIX MA02-74 (02)		
0. SUBTASK SUFFIX 02	11. TASK TITLE MARMAP II: Multispecies, Middle Atlantic Bight				
1. NUMBER OF STP'S 11	12. SUBTASK TITLE Groundfish Assessment: Spring Cruise - FY 75				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 20.3	A. START DATE (Estimated/Firm) N/A		A. NAME Resource Assessment Investigations		
B. TOTAL FUNDS N/A	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 Multispecies: Demersal Finfishes			19. LIFE STAGE(S) All		
20. WORK LOCATION Middle and South U. S. Atlantic Coast			21. PERCENT RECREATIONAL 50%		
2. KEY WORDS Groundfish Assessment Distribution and abundance Species Composition					
3. SUBTASK OBJECTIVES AND METHODOLOGY Plan and coordinate cruise. Complete spring survey cruise, including distribution of special samples (species intensity, contaminant, plankton and water samples). Complete and distribute cruise report. Complete data processing (hand processing, keypunching, correcting units).					
4. OFFICIAL PREPARING REPORT (Signature) <i>Arthur S. Merrill</i>			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl Sudeman</i>		



1. FISCAL YEAR  
1975

2. DATE PREPARED  
10/25/74

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3. TDP NUMBER  
MAC-002-75-S2-A-1

4. SUB-OBJECTIVE CODE  
II-C-2

5. PRIOR DATE  
10/10/73

6. TASK NUMBER  
8812P1

7. ORGANIZATION CODE  
FB6200

8. FACILITY  
MACFC - 162

9. PRIOR TDP NO. PLUS STP SUFFIX  
MA-02-74 (03)

10. SUBTASK SUFFIX  
03

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

13. NUMBER OF STP'S  
11

12. SUBTASK TITLE  
Resource Assessment - Invertebrates

14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
1. DIRECT FUNDS 48.7	2. TOTAL FUNDS N/A	A. START DATE (Estimated/Firm) N/A	B. END DATE N/A	A. NAME Resource Assessment Investigations	
3. SOURCE NMFS	4. MAN YEARS 2.0	C. CONTRACT/GRANT NUMBER N/A	17 A. COOPERATIVE RESOURCES N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill	17 B. SOURCE N/A

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

19. LIFE STAGE(S)  
Juvenile, Adult

20. WORK LOCATION  
U. S. Middle Atlantic Coast

21. PERCENT RECREATIONAL  
0

22. KEY WORDS  
Shellfish  
Distribution  
Size composition

23. SUBTASK OBJECTIVES AND METHODOLOGY  
Complete 5 Ms on surf clams and ocean quahogs. Complete tabulation and analysis of 5 years of surf clam survey data. Analyze and tabulate data from slides for geographic variations in spawning of surf clams. Complete surf clam cruise and cruise reports. Continue participation in State-Federal management program for surf clams. Complete sampling in Raritan Bay and determine hard clam density and associated fauna. Prepare hard clam materials for a comparative study of gametogenesis. Complete sea scallop cruise and cruise report. Complete 3 Ms on earlier oyster studies.

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

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

NMFS SUBTASK PLAN  
26. ACTIVITY SCHEDULE AND EVENTS

NUMBER EACH ACTIVITY OR EVENT.		NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 1975												Fiscal Year 1976					
A	OR E		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
A		Ms: Distribution and abundance of surf clams	X	-----										X						
A		Ms: Distribution and abundance of ocean quahogs	X	-----										X						
A		Ms: Burrowing of <u>Spisula</u>	X	-----										X						
A		Ms: Atlantic coast surf clam fishery, 1972	X	-----										X						
A		Ms: Atlantic coast surf clam fishery, 1973	X	-----										X						
A		Complete analysis of 5-years of survey data, 66-70.	X	-----																X
A		Complete analyses and tabulate data from gametogenesis studies of surf clams.						X	-----											X
A		Conduct monthly cruises in Raritan Bay for hard clam assessment and biological study	X	-----										X						
A		Prepare report on Raritan Bay hard clam density and associated fauna												X	-----	X				
0 A		Complete collection and lab preparation of samples for gametogenesis study of hard clams	X	-----										X						
1 A		Complete Analysis and tabulation of data from gametogenesis studies of hard clams.						X	-----											X
2 E		Initiate and complete surf clam assessment cruise.	X																	
3 A		Complete surf clam cruise report.	X	-----	X															
4 A		Participation in State-Federal Management of surf clams.	X	-----																X
5 E		Initiate and complete sea scallop assessment cruise.																		
6 A		Complete sea scallop cruise report.										X			X	-----	X			
7 A		Complete Ms: Sea anemones on oyster.	X	-----										X						
8 A		Complete Ms: Ecological significance of rock crab.	X	-----										X						
9 A		Complete Ms: Effects of quicklime on oyster seed production.						X	-----	X										

1. FISCAL YEAR  
1975

2. DATE PREPARED  
10/25/74

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(See Detailed Instructions)

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National Oceanic and  
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Washington, D.C. 20235

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3. TDP NUMBER  
MAC-002-75-S2-A-1

4. SUB-OBJECTIVE CODE  
II-C-2

5. PRIOR DATE  
10/10/73

6. TASK NUMBER  
8812P1

7. ORGANIZATION CODE  
FB6200

8. FACILITY  
MACFC - 162

9. PRIOR TDP NO. PLUS STP SUFFIX  
MA-2=74 (04)

10. SUBTASK SUFFIX  
04

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

12. NUMBER OF STP'S  
11

12. SUBTASK TITLE  
Historical Cruise Data - 18 Cruises (1968-1972) Between Florida and New York

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
---------------	--------------------------	-----------------------------

14. DIRECT FUNDS 11.3	15. A. START DATE (Estimated/Firm) N/A	16. A. NAME Resource Assessment Investigations
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14. TOTAL FUNDS N/A	15. B. END DATE N/A	
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14. SOURCE NMFS	15. C. CONTRACT/GRANT NUMBER N/A	16. B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill
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14. MAN YEARS .5	17. A. COOPERATIVE RESOURCES N/A	17. B. SOURCE N/A
---------------------	-------------------------------------	----------------------

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

20. WORK LOCATION U. S. Atlantic Coast New York to Florida; Sandy Hook Bay	21. PERCENT RECREATIONAL 50%
--	---------------------------------

22. KEY WORDS  
Benthic finfishes  
Species association indices

23. SUBTASK OBJECTIVES AND METHODOLOGY  
Complete manuscript "Summer benthic fish fauna of Sandy Hook Bay, New Jersey". Begin indepth statistical analysis of coastal trawl data collected during 1968-1972 from New York to Florida with special emphasis on recurrent group analysis in the South Atlantic and inshore Middle Atlantic Bight areas.

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

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



1975

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3. TDP NUMBER MAC-002-75-S2-A-1		4. SUB-OBJECTIVE CODE II-C-2		5. PRIOR DATE 10/10/73	
6. TASK NUMBER 8812P1	7. ORGANIZATION CODE FB6200	8. FACILITY MACFC - 162		9. PRIOR TDP NO. PLUS STP SUFFIX MA02-74 (05)	
10. SUBTASK SUFFIX 05	11. TASK TITLE MARMAP II: Multispecies, Middle Atlantic Bight				
13. NUMBER OF STP'S 11	12. SUBTASK TITLE Status of Stocks (Species Briefing Books)				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 9.6	A. START DATE (Estimated/Firm) N/A	A. NAME Resource Assessment Investigations			
B. TOTAL FUNDS N/A	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 .5	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A			
18. SPECIES Multispecies; Demersal and Bathypelagic		19. LIFE STAGE(S) All			
20. WORK LOCATION Middle Atlantic Bight		21. PERCENT RECREATIONAL 80%			
22. KEY WORDS Briefing Books; biology and economics; fisheries; capsule life histories					
23. SUBTASK OBJECTIVES AND METHODOLOGY Compile data and assemble briefing books, including literature search and compilation of available catch statistics. Complete initial drafts and submit to Resource Assessment Investigations. Continue updating books. Select two of the most complete briefing books and edit for publication.					
24. OFFICIAL PREPARING REPORT (Signature) <i>Arthur S. Merrill</i>			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl Sundeoma</i>		



1975

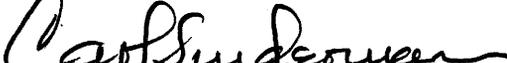
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3. TDP NUMBER MAC-002-75-S2-A-1		4. SUB-OBJECTIVE CODE II-C-2		5. PRIOR DATE 10/10/73	
5. TASK NUMBER 8812P1		7. ORGANIZATION CODE FB6200		8. FACILITY MACFC - 162	
9. PRIOR TDP NO. PLUS STP SUFFIX MA02-74 (06)					
10. SUBTASK SUFFIX 06		11. TASK TITLE MARMAP II: Multispecies, Middle Atlantic Bight			
11. NUMBER OF STP'S 11		12. SUBTASK TITLE Historical & Ongoing Assessment of the genus <u>Paralichthys</u>			
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 8.2		A. START DATE (Estimated/Firm) N/A		A. NAME Resource Assessment Investigations	
B. TOTAL FUNDS N/A		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 .5		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A	
18. SPECIES Summer flounder Gulf flounder		Southern flounder Broad flounder		19. LIFE STAGE(S) Adult	
20. WORK LOCATION Middle & South U. S. Atlantic Coast		21. PERCENT RECREATIONAL 40%			
22. KEY WORDS Flounders Racial analysis Discriminant function analysis Field Key					
23. SUBTASK OBJECTIVES AND METHODOLOGY Complete preliminary regression analysis, selection of variates, and discriminant function analysis of morphometric measurements and meristic counts needed to prepare field keys to the summer, southern, Gulf and broad flounder. Identify unit stocks of the summer flounder from New York to Florida.					
24. OFFICIAL PREPARING REPORT (Signature) 			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) 		



1975

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

10/10/75

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3. TDP NUMBER

MAC-002-75-S2-A-1

4. SUB-OBJECTIVE CODE

II-C-2

5. PRIOR DATE

10/10/73

6. TASK NUMBER

8812P1

7. ORGANIZATION CODE

FB6200

8. FACILITY

MACFC - 162

9. PRIOR TDP NO. PLUS STP SUFFIX

MA02-74 (07)

10. SUBTASK SUFFIX

07

11. TASK TITLE

MARMAP II: Multispecies, Middle Atlantic Bight

11. NUMBER OF STP'S

11

12. SUBTASK TITLE

Bluefish Monograph (*Pomatomus saltatrix*)

14. RESOURCES

15. CONTRACT/GRANT INFO.

16. PERFORMING ORGANIZATION

A. DIRECT FUNDS

11.7

A. START DATE (Estimated/Firm)

N/A

A. NAME

Resource Assessment Investigations

B. TOTAL FUNDS

N/A

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

.5

17 A. COOPERATIVE RESOURCES

N/A

17 B. SOURCE

N/A

18. SPECIES

Bluefish

19. LIFE STAGE(S)

All stages

20. WORK LOCATION

U. S. Atlantic Coast

21. PERCENT RECREATIONAL

85%

22. KEY WORDS

Bluefish

diet items

Morphometric analysis

Spawning

Age & Growth

Bibliography

Eggs & larva

Distribution

23. SUBTASK OBJECTIVES AND METHODOLOGY

Complete organization and editing of manuscripts reporting studies on life history of bluefish. Incorporate manuscripts into a compendium on the entire life history of the bluefish.

24. OFFICIAL PREPARING REPORT (Signature)

*Arthur S. Merrill*

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)

*Carl Sudeman*

**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

MAC-002-75-S2-A-1(07)

NUMBER EACH ACTIVITY OR 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 <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 19 <u>75</u>												Fiscal Year 19 <u>76</u>								
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6			
			1	A	Edit morphometric Ms of bluefish, review and submit to editor.	X	—	X															
2	A	Complete age and growth Ms, review and revise, and submit to editor.	X	—	—	—	—	—	—	—	—	X											
3	A	Update and complete food items Ms, review and revise, and submit to editor.	X	—	—	—	—	—	—	—	X												
4	A	Complete bibliography Ms, review and revise, and submit to editor.	X	—	—	—	—	—	—	—	X												
5	A	Complete tag and migration Ms, review and revise, and submit to editor.	X	—	—	—	—	—	—	—	X												
6	A	Complete eggs and larvae Ms, review and revise, and submit to editor.	X	—	—	X																	
7	A	Complete review and revision of all sections by compendium editor.									X	—	X										
8	A	Preparation of Ms general review and statement of needs for further research and management implications by compendium editor.										X	X										
9	E	Submit entire compendium for publication.																			X		

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3. TDP NUMBER

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4. SUB-OBJECTIVE CODE

II-C-2

5. PRIOR DATE

10/10/73

6. TASK NUMBER

8812P1

7. ORGANIZATION CODE

FB6200

8. FACILITY

MACFC - 162

9. PRIOR TDP NO. PLUS STP SUFFIX

MA02-74 (08)

10. SUBTASK SUFFIX

08

11. TASK TITLE

MARMAP II: Multispecies, Middle Atlantic Bight

12. NUMBER OF STP'S

11

12. SUBTASK TITLE

Historical and Ongoing Assessment of the Family Sciaenidae

14. RESOURCES

15. CONTRACT/GRANT INFO.

16. PERFORMING ORGANIZATION

14. DIRECT FUNDS

27.3

A. START DATE (Estimated/Firm)

N/A

A. NAME

Resource Assessment Investigations

14. TOTAL FUNDS

N/A

B. END DATE

N/A

14. SOURCE

NMFS

C. CONTRACT/GRANT NUMBER

N/A

B. FOR INFORMATION CONTACT:

Dr. Arthur S. Merrill

14. MAN YEARS

1.5

17 A. COOPERATIVE RESOURCES

N/A

17 B. SOURCE

N/A

14. SPECIES

Weakfish, Spot, Atlantic croaker  
Northern kingfish, Southern kingfish

19. LIFE STAGE(S)

Adult

14. WORK LOCATION

J. S. Atlantic Coast

21. PERCENT RECREATIONAL

80%

14. KEY WORDS

Sciaenidae  
Fecundity

Age & Growth  
Stock identification

14. SUBTASK OBJECTIVES AND METHODOLOGY

Continue age and growth studies based on scales by mounting and analyzing collected materials for selected sciaenid species. Continue fecundity and unit stock identification studies. Collect specimens for life studies from the fall groundfish cruises. Continue to sample at selected ports along the coast to supplement present data bases.

14. OFFICIAL PREPARING REPORT (Signature)

*Arthur S. Merrill*

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)

*Carl Sundeeman*



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3. TDP NUMBER MAC-002-75-S2-A-1		4. SUB-OBJECTIVE CODE II-C-2		5. PRIOR DATE New STP	
6. TASK NUMBER 8812P1	7. ORGANIZATION CODE FB6200	8. FACILITY MACFC - 162		9. PRIOR TDP NO. PLUS STP SUFFIX -- (09)	
10. SUBTASK SUFFIX 09	11. TASK TITLE MARMAP II: Multispecies, Middle Atlantic Bight				
1. NUMBER OF STP'S 11	12. SUBTASK TITLE Groundfish Assessment - Monthly Survey				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 50.5	A. START DATE (Estimated/Firm) N/A	A. NAME Resource Assessment Investigations			
B. TOTAL FUNDS NMFS	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			
8. SPECIES Multispecies; Demersal Finfishes		19. LIFE STAGE(S) All			
10. WORK LOCATION New York Bight		21. PERCENT RECREATIONAL 50%			
2. KEY WORDS Groundfish Assessment      Distribution and abundance Species composition					
3. SUBTASK OBJECTIVES AND METHODOLOGY Plan and coordinate cruises. Complete cruises and distribute special samples (life-history collections, contaminant, diseased fish). Complete and distribute Fishermen Report and cruise report. Process data (hand processing, keypunching, correcting audits). Develop analysis programs. Prepare summary report for FY 75 cruises.					
4. OFFICIAL PREPARING REPORT (Signature) <i>Arthur S Merrill</i>			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl Huderman</i>		

**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

NUMBER EACH ACTIVITY OR 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.

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

A O R E	NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 1975												Fiscal Year 1976						
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	
A	Plan and coordinate monthly cruises.	X																	X	→
A	Complete monthly cruises and distribute samples.	X																	X	→
A	Complete and distribute Fisherman and cruise reports.	X																	X	→
A	Process data (hand and machine).	X																	X	→
A	Complete development of analysis programs.					X							X							
A	Prepare summary reports of FY 75 cruises.												X			X				

NOAA FORM 32-15A -74)	U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	1. FISCAL YEAR 1975
		2. DATE PREPARED 10/25/74

### NMFS SUBTASK PLAN

(See Detailed Instructions)

(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 ( <i>Sandy Hook and Oxford, for example</i> ) 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.
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3. TDP NUMBER <b>MAC-002-75-S2-A-1</b>		4. SUB-OBJECTIVE CODE <b>II-C-2</b>	5. PRIOR DATE <b>New STP</b>
6. TASK NUMBER <b>8812P1</b>	7. ORGANIZATION CODE <b>FB6200</b>	8. FACILITY <b>MACFC - 162</b>	9. PRIOR TDP NO. PLUS STP SUFFIX <b>-- (10)</b>
10. SUBTASK SUFFIX <b>10</b>	11. TASK TITLE <b>MARMAP II: Multispecies, Middle Atlantic Bight</b>		
12. NUMBER OF STP'S <b>11</b>	12. SUBTASK TITLE <b>Life History Aspects of Finfishes Found in the New York Bight</b>		

14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
14. DIRECT FUNDS <b>54.3</b>		A. START DATE (Estimated/Firm) <b>N/A</b>		A. NAME <b>Resource Assessment Investigations</b>	
14. TOTAL FUNDS <b>N/A</b>		B. END DATE <b>N/A</b>			
14. SOURCE <b>NMFS</b>		C. CONTRACT/GRANT NUMBER <b>N/A</b>		B. FOR INFORMATION CONTACT: <b>Dr. Arthur S. Merrill</b>	
14. MAN YEARS <b>2.6</b>		17 A. COOPERATIVE RESOURCES <b>N/A</b>		17 B. SOURCE <b>N/A</b>	
18. SPECIES <b>Multispecies: Demersal Finfishes</b>				19. LIFE STAGE(S) <b>Adult</b>	
20. WORK LOCATION <b>"New York Bight"</b>				21. PERCENT RECREATIONAL <b>80%</b>	

22. KEY WORDS

<b>Benthic Finfishes</b> <b>Life History</b>	<b>Biostatistics</b> <b>Species diversity</b>
---	--

23. SUBTASK OBJECTIVES AND METHODOLOGY

Collect samples of all finfishes captured during monthly groundfish cruises in the N. Y. Bight. Provide species diversity, and determine length-weight relations, condition coefficients, sex ratios, and gonadal development data for selected species found in the N. Y. Bight with emphasis on the sportfish element. Prepare FY 75 semi-annual summary reports and a final report for publication.

24. OFFICIAL PREPARING REPORT (Signature) 	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) 
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**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

—NUMBER EACH ACTIVITY OR 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.

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

NUMBER A OR E	NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 19 <del>75</del>												Fiscal Year 19 <del>75</del> 76						
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	
		A	Collect samples during monthly assessment cruises.	X																
A	Determine species diversity and process samples for biological indices.	X																	X	→
A	Prepare FY 75 semi-annual summary report of findings.						X	—	X								X	—	X	
A	Complete FY 75 final report (Ms).													X						X

1975

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

10/25/74

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3. TDP NUMBER MAC-002-75-S2-A-1		4. SUB-OBJECTIVE CODE II-C-2		5. PRIOR DATE New STP	
6. TASK NUMBER 8812P1	7. ORGANIZATION CODE FB6200	8. FACILITY MACFC - 16		9. PRIOR TDP NO. PLUS STP SUFFIX -- (11)	
10. SUBTASK SUFFIX 11	11. TASK TITLE MARMAP II: Multispecies, Middle Atlantic Bight				
13. NUMBER OF STP'S 11	12. SUBTASK TITLE Juvenile Fish Distribution and Recruitment				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
17. DIRECT FUNDS 9.7	A. START DATE (Estimated/Firm) N/A	A. NAME Resource Assessment Investigations			
18. TOTAL FUNDS N/A	B. END DATE N/A				
19. SOURCE NMFS	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill			
20. MAN YEARS .5	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A			
22. SPECIES Multispecies		19. LIFE STAGE(S) Juvenile			
23. WORK LOCATION Middle Atlantic Bight		21. PERCENT RECREATIONAL 50%			
24. KEY WORDS Juvenile fish                      Species composition                      Seasonal movements & availability Recruitment                      Relative abundance					
25. SUBTASK OBJECTIVES AND METHODOLOGY Collect, identify and store data on juvenile fish components from ongoing research efforts. Retrieve current and historic data for correlation of juvenile fish seasonal availability with movements of adults and environmental parameters. Establish indices of relative abundance of juveniles for correlation with recruitment to fishable stocks. Complete Ms on trends in abundance and composition of juvenile fish.					
26. OFFICIAL PREPARING REPORT (Signature) 			27. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) 		

**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

MAC-002-75-S2-A-1 (11)

NUMBER EACH ACTIVITY OR 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 <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 19 <u>75</u>												Fiscal Year 19 <u>76</u>					
		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.	X															
A	Analyze current data.					X													X→
A	Develop a standardization for expressing relative abundance.								X	X									
A	Determine correlations with adult distribution and environmental parameters for current stocks.											X	X						
A	Examine historical data and begin extracting appropriate portions for comparison with current information.										X								X→
A	Begin juvenile fish Ms.											X							X→

1975

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

10/25/74

(Submit four copies.)

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Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235

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3. TDP NUMBER MAC-005-75-FA-A-1	4. SUB-OBJECTIVE CODE II-C-2	5. PRIOR DATE 10/10/73
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6. TASK NUMBER 8813P1	7. ORGANIZATION CODE FB6200	8. FACILITY MACFC - 162	9. PRIOR TDP NO. PLUS STP SUFFIX MA05-74 (01)
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10. SUBTASK SUFFIX 01	11. TASK TITLE Fishery Analysis: Middle Atlantic Sportfish
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1. NUMBER OF STP'S 3	12. SUBTASK TITLE Biostatistics, Middle Atlantic Sportfish
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14. RESOURCES		15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS 34.6	A. START DATE (Estimated/Firm) N/A	A. NAME Resource Assessment Investigations	
B. TOTAL FUNDS N/A	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 2.5	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A	

18. SPECIES Multispecies	19. LIFE STAGE(S) Young and Adult
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20. WORK LOCATION Ocean City, Maryland	21. PERCENT RECREATIONAL 100%
---	----------------------------------

2. KEY WORDS  
Recreational fishing  
Survey

3. 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 clambers using a random sampling schedule and stratification of the study area and time period. Prepare specifications for possible FY 76 contracts collection of sportfish catch statistics by States based on prototype study.

4. OFFICIAL PREPARING REPORT (Signature) <i>Arthur S. Merrill</i>	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl Sudow</i>
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**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

NUMBER EACH ACTIVITY OR 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.

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NUMBER	A OR E	NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 1975												Fiscal Year 1976					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
			1	A	Conduct field survey interviewing boat and shore fishermen actively engaged in fishing, crabbing or clamming.	X														
2	A	Process field data through ADP.				X														X
3	A	Subject processed data to statistical tests.										X								X
4	A	Prepare semi-annual reports.						X	X					X	X					
5	A	Prepare specifications for possible contracts to the other agencies.											X	X						

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

1975

10/25/75

(Submit four copies.)

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Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235

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1. TDP NUMBER MAC-005-75-FA-A-1		4. SUB-OBJECTIVE CODE II-C-2		5. PRIOR DATE New STP	
6. TASK NUMBER 8813P1	7. ORGANIZATION CODE FB6200	8. FACILITY MACFC - 162		9. PRIOR TDP NO. PLUS STP SUFFIX — (02)	
10. SUBTASK SUFFIX 02	11. TASK TITLE Fishery Analysis, Middle Atlantic Sportfish				
1. NUMBER OF STP'S 3	12. SUBTASK TITLE Tilefish Fishery - Middle Atlantic Bight				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 14.1	A. START DATE (Estimated/Firm) N/A	A. NAME Resource Assessment Investigations			
B. TOTAL FUNDS N/A	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			
8. SPECIES Tilefish		19. LIFE STAGE(S) Juvenile, Adult			
10. WORK LOCATION Middle Atlantic Bight		21. PERCENT RECREATIONAL 80%			
2. KEY WORDS Tilefish                      Recreational fishing Fishery					
3. SUBTASK OBJECTIVES AND METHODOLOGY Determine the various sportfish and commercial vessels that are engaged in tilefishing along the Middle Atlantic Bight, the areas where they fish, and the total catch. Sample fishermen and determine catch per unit of effort. Search the literature for historical information on tilefish in the area and interview fishermen that have been or are now presently engaged in tilefishing.					
4. OFFICIAL PREPARING REPORT (Signature) <i>Arthur S. Merrill</i>			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl J. Suderma</i>		

**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

MAC-005-75-FA-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 <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 19 <u>75</u>												Fiscal Year 19 <u>76</u>					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
			1	A	Literature search.	X	---	X												
2	A	Determine vessels engaged in fishing, name, port, captain.	X	---	X															
3	A	Measure and weigh samples of fish taken by various boats throughout the year.	X	-----									X							
4	A	Prepare an annotated list of references.					X	X												
5	A	Complete Ms final report.											X	-----						X



**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

MAC-005-75-FA-A-1 (03)

NUMBER EACH ACTIVITY OR 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 <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 1975												Fiscal Year 1976										
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6					
			1	A	Complete processing of contest catch records.									X	-----	X									
2	A	Calculate quality-of-fishing Index.									X	-----	X												
3	A	Determine movements and migrations.											X	-----	X										
4	A	Prepare a report for distribution to various fishing clubs participating in contest.												X	-----	X									
5	A	Begin preparation of Ms.												X	-----	X	-----	X	→						

FY 75

October 1974

**NMFS SUBTASK PLAN**

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TO: Director, National Marine Fisheries Service, ATTN: Fx5 National Oceanic and Atmospheric Administration Washington, D.C. 20235

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3. TDP NUMBER  
MAC-006-75-IE-A-1

4. SUB-OBJECTIVE CODE  
IV-A-9

5. PRIOR DATE  
N/A

6. TASK NUMBER

8818P1

7. ORGANIZATION CODE

FB6100

8. FACILITY

Sandy Hook Laboratory 161

9. PRIOR TDP NO. PLUS STP SUFFIX

MA-06-IE-01

10. SUBTASK SUFFIX

01

11. TASK TITLE

Behavior of Fishes Under Stress

13. NUMBER OF STP'S

2

12. SUBTASK TITLE

Behavior of Fishes Under Stress: Field Studies

14. RESOURCES

15. CONTRACT/GRANT INFO.

16. PERFORMING ORGANIZATION

14. DIRECT FUNDS

41.8K

A. START DATE (Estimated/Firm)

N/A

A. NAME

Ecosystems Investigations

14. TOTAL FUNDS

N/A

B. END DATE

N/A

14. SOURCE

NMFS

C. CONTRACT/GRANT NUMBER

N/A

B. FOR INFORMATION CONTACT:

Dr. John B. Pearce

14. MAN YEARS

2.9

17 A. COOPERATIVE RESOURCES

N/A

17 B. SOURCE

N/A

14. SPECIES

Pseudopleuronectes americanus; Tautoga onitis  
Tautoglabrus adspersus

19. LIFE STAGE(S)

adults and juveniles

14. WORK LOCATION

New York Bight

21. PERCENT RECREATIONAL

100% of species under study are in this category

14. KEY WORDS

Food habits, bottom habitat, sonic tracking, temperature, habitat sharing, benthic food organisms

14. SUBTASK OBJECTIVES AND METHODOLOGY

Definition of normal life habits of winter flounder, a very important commercial and recreational species to establish homesite requirements, feeding and food habits, relation to substrate and seasonal movements as related to other co-resident species (tautog and cunner) which occupy or share ecological niches common to a number of important recreational and commercial fish species. Integration of these findings for all three species in relation to the ecosystem in which they reside.

14. OFFICIAL PREPARING REPORT (Signature)

Bori L. Olla

John B. Pearce

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)

*Carl J. Suderwan*



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3. TDP NUMBER MAC-006-75-IE-A-1		4. SUB-OBJECTIVE CODE IV-A-9		5. PRIOR DATE N/A	
6. TASK NUMBER 8818P1	7. ORGANIZATION CODE FB6100	8. FACILITY Sandy Hook Laboratory 161		9. PRIOR TDP NO. PLUS STP SUFFIX MA-06-IE-02	
10. SUBTASK SUFFIX 02	11. TASK TITLE Behavior of Fishes Under Stress				
13. NUMBER OF STP'S 2	12. SUBTASK TITLE Behavior of Fishes Under Stress: Laboratory Studies				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 41.7K		A. START DATE (Estimated/Firm) N/A		A. NAME Ecosystems Investigations	
B. TOTAL FUNDS N/A		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 2.3		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A	
18. SPECIES <u>Cynoscion regalis</u> ; juvenile <u>Pomatomus saltatrix</u> <u>Tautoga onitis</u>				19. LIFE STAGE(S) adults and juveniles	
20. WORK LOCATION Sandy Hook Laboratory				21. PERCENT RECREATIONAL 100% of species under study are in this category	
22. KEY WORDS Environmental requirements, stress, feeding, activity, territory, shelter, temperature					
23. SUBTASK OBJECTIVES AND METHODOLOGY Determination of normal levels of feeding and activity in adult tautog and weakfish and in juvenile bluefish to use as a basis for defining environmental requirements of different species which occupy or share ecological niches common to a number of important recreational and commercial fish species. Continued development of methodology to define the way the effects of selected stresses (currently temperature and in future other selected contaminants) are manifested on the life habits of these species.					
24. OFFICIAL PREPARING REPORT (Signature) Bori L. Olla                      John B. Pearce			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl J. Suderowman</i>		



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TDP NUMBER MAC-007-75-IE-A-1	4. SUB-OBJECTIVE CODE IV-A-9	5. PRIOR DATE N/A
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TASK NUMBER 8818P2	7. ORGANIZATION CODE FB6100	8. FACILITY Sandy Hook Laboratory 161	9. PRIOR TDP NO. PLUS STP SUFFIX N/A
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SUBTASK SUFFIX 01	11. TASK TITLE Impact of Environmental Change, Middle Atlantic
----------------------	---

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

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
---------------	--------------------------	-----------------------------

DIRECT FUNDS 40.0K	A. START DATE (Estimated/Firm) N/A	A. NAME Ecosystems Investigations
-----------------------	---------------------------------------	--------------------------------------

TOTAL FUNDS N/A	B. END DATE N/A	
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SOURCE NMFS	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. John B. Pearce
----------------	---------------------------------	---

MAN YEARS 5.4	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A
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SPECIES All species	19. LIFE STAGE(S) N/A
------------------------	--------------------------

WORK LOCATION Raritan Bay, Long Island Sound	21. PERCENT RECREATIONAL 0%
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KEY WORDS  
Benthos, macrofauna, zooplankton, distribution, abundance, associations, seasonality, nutrients, sediments, heavy metals, pollution effects.

SUBTASK OBJECTIVES AND METHODOLOGY  
Establish baselines of environmental quality for Raritan Bay and Long Island Sound. Describe distributions, abundance and diversity of benthic fauna, and relations to sediment, dredging, dumping, thermal and sewage additions. Methodology: Seasonal benthic and water samples, lab sorting and analyses. Chemical and geological analyses. Statistical treatments for diversity and correlations with fishery resources.

OFFICIAL PREPARING REPORT (Signature) Robert Reid	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) John B. Pearce
--	---

**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

NUMBER EACH ACTIVITY OR 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.

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

A O R E	NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 1975												Fiscal Year 1976											
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6						
E	RARITAN BAY (RB): Submit final report to EPA on stations surrounding NAD-Earle USEPA Field Testing Station.						X																		
E	Submit final report on Ambrose Channel Stations.										X														
A	Preparation and summation of total RB data.			X	-----										X										
E	LONG ISLAND SOUND (LIS): Report(s) to New England River Basins Committee on environmental baselines in LIS.					X																			
A	Prepare publication(s) on benthic macrofauna of LIS.									X	-----										X				

FY 75

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

October 1974

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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 <b>MAC-007-75-IE-A-1</b>		4. SUB-OBJECTIVE CODE <b>IV-A-9</b>		5. PRIOR DATE <b>N/A</b>	
6. TASK NUMBER <b>8818P2</b>	7. ORGANIZATION CODE <b>FB6100</b>	8. FACILITY <b>Sandy Hook Laboratory 161</b>		9. PRIOR TDP NO. PLUS STP SUFFIX <b>N/A</b>	
10. SUBTASK SUFFIX <b>02</b>	11. TASK TITLE <b>Impact of Environmental Change, Middle Atlantic</b>				
13. NUMBER OF STP'S <b>2</b>	12. SUBTASK TITLE <b>Impact of Environmental Change, Deep Water Oil Exploration and Waste Disposal Sites</b>				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS <b>11.6K</b>	A. START DATE (Estimated/Firm) <b>N/A</b>	A. NAME <b>Ecosystems Investigations</b>			
B. TOTAL FUNDS <b>N/A</b>	B. END DATE <b>N/A</b>				
C. SOURCE <b>NMFS</b>	C. CONTRACT/GRANT NUMBER <b>N/A</b>	B. FOR INFORMATION CONTACT: <b>Dr. John B. Pearce</b>			
D. MAN YEARS <b>1.1</b>	17 A. COOPERATIVE RESOURCES <b>N/A</b>	17 B. SOURCE <b>N/A</b>			
18. SPECIES <b>N/A</b>		19. LIFE STAGE(S) <b>N/A</b>			
20. WORK LOCATION <b>Middle Atlantic Bight</b>		21. PERCENT RECREATIONAL <b>0%</b>			
2. KEY WORDS <b>Benthos, macrofauna, distribution and abundance, sediments, heavy metal contaminants, petroleum contaminants.</b>					
3. SUBTASK OBJECTIVES AND METHODOLOGY <b>Establish baselines of environmental quality for Baltimore Canyon Trough area. Describe distributions, abundance and diversity of benthic fauna, and relations to sediment, dredging, dumping, thermal and sewage additions. Methodology: Benthic and water samples, lab sorting and analyses. Chemical and geological analyses. Relate environmental impact to living marine resources and fisheries using normal statistical and ADP procedures.</b>					
4. OFFICIAL PREPARING REPORT (Signature) <b>Robert Reid</b>			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <b>Carl J. Suderbaum</b>		

**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

MAC-007-75-IE-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 <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 19 <u>75</u>												Fiscal Year 19 <u>76</u>					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
		E	Cruises; cooperative cruise on <u>Mt. Mitchell</u> with USGS, NOS and NMFS-NOAA personnel.	X															
A	Samples processing.		X	—————								X							
A	Report on selected stations.													X	—————	X			

OAA FORM 32-15A (1-74)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION		1. FISCAL YEAR FY 75	
NMFS SUBTASK PLAN (See Detailed Instructions)				2. DATE PREPARED October 1974	
(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 ( <i>Sandy Hook and Oxford, for example</i> ) 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-008-75-IE-A-1		4. SUB-OBJECTIVE CODE IV-A-9		5. PRIOR DATE N/A	
6. TASK NUMBER 8818P3	7. ORGANIZATION CODE FB6100	8. FACILITY Sandy Hook Laboratory 161		9. PRIOR TDP NO. PLUS STP SUFFIX MA08-74(01)	
10. SUBTASK SUFFIX 01	11. TASK TITLE Biochemical Modeling - Middle Atlantic				
1. 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	
A. DIRECT FUNDS 90.0K	A. START DATE (Estimated/Firm) N/A	A. NAME Ecosystems Investigations			
B. TOTAL FUNDS N/A	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 4.7	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A			
18. SPECIES Rock crab, sand shrimp, grass shrimp, American lobster, stone crab		19. LIFE STAGE(S) larval, adult			
20. WORK LOCATION (Raritan Bay New York Bight) laboratory		21. PERCENT RECREATIONAL N/A			
22. KEY WORDS Osmoregulation, respiration, metabolism, enzymes, ion-transport, organically bound metals, chelation, metal adsorption, gills, ATPase, Glutamic dehydrogenase.					
23. 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 to be particularly sensitive to environmental influence such as osmoregulation, respiration, ion-transport, and amino acid metabolism. Specific enzymes assayed include Mg-ATPase, Na <sup>+</sup> -K <sup>+</sup> -ATPase, and Glutamic dehydrogenase. Both in vitro and					
24. OFFICIAL PREPARING REPORT (Signature) Robert K. Tucker      John B. Pearce			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl J. Sundermann</i>		

23. Subtask Objectives and Methodology (continued)

in vivo exposure to metals in their various forms will be carried out, with the Milford bioassay facility being used for in vivo studies. A facility is being developed for laboratory studies with shrimp in which environmental variables can be carefully controlled. Data related to other fisheries resources. Initial experimental species include Cancer irroratus, potential fisheries resource.



FY 75

October 1974

## NMFS SUBTASK PLAN

(See Detailed Instructions)

(Submit four copies.)

TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235FMC'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-008-75-IE-A-1		4. SUB-OBJECTIVE CODE IV-A-9		5. PRIOR DATE N/A	
6. TASK NUMBER 8818P3		7. ORGANIZATION CODE FB6100		8. FACILITY Sandy Hook Laboratory 161	
9. PRIOR TDP NO. PLUS STP SUFFIX MA08-74 (02)		10. SUBTASK SUFFIX 02		11. TASK TITLE Biochemical Modeling - Middle Atlantic	
11. NUMBER OF STP'S 2		12. SUBTASK TITLE Environmental Forms of Nutrients and Heavy Metals			
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 46.1K		A. START DATE (Estimated/Firm) N/A		A. NAME Ecosystems Investigations	
B. TOTAL FUNDS N/A		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 3.3		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A	
18. SPECIES N/A				19. LIFE STAGE(S) N/A	
20. WORK LOCATION Raritan Bay, New York Bight, laboratory				21. PERCENT RECREATIONAL	
22. KEY WORDS Cadmium, lead, zinc, copper, polarography, ligend binding, chelation, heavy metals, nutrients, nitrogen, phosphorus					
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 resources may be modeled. In cooperation with other tasks, nutrients are also measured. Methods include pulsed anodic polarography, liquid and gas chromatography, equilibrium dialysis and standard chemical analysis.					
24. OFFICIAL PREPARING REPORT (Signature) Robert K. Tucker			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) John B. Pearce <i>Carl J. Suderbaum</i>		



(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-009-75-IE-A

4. SUB-OBJECTIVE CODE: IV-A-3

5. PRIOR DATE: N/A

TASK NUMBER: 8818P4

7. ORGANIZATION CODE: FB6110

8. FACILITY: Milford Lab., Conn. 163

9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-009-74-IE-A (01)

0. SUBTASK SUFFIX: 01

11. TASK TITLE: Environmental Chemistry and Microbiology

1. NUMBER OF STP'S: 2

12. SUBTASK TITLE: Microbial Ecology, Ocean Dumping; and Disease

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
---------------	--------------------------	-----------------------------

A. DIRECT FUNDS 40,0K	A. START DATE (Estimated/Firm) N/A	A. NAME Middle Atlantic Coastal Fisheries Center, Ecosystems Investigations, Environmental Microbiology and Chemistry Investigation
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B. TOTAL FUNDS N/A	B. END DATE N/A	B. FOR INFORMATION CONTACT: John B. Pearce
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C. SOURCE NMFS	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: John B. Pearce
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D. MAN YEARS 3.9	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A
---------------------	------------------------------------	---------------------

E. SPECIES Flounder, lobster, clam, scallops, oysters and others as appropriate.	19. LIFE STAGE(S) Adult
---	----------------------------

F. WORK LOCATION New York Bight, Long Island Sound, Delaware and Chesapeake Bay.	21. PERCENT RECREATIONAL 50%
---	---------------------------------

G. KEY WORDS  
Marine Bacteria, Fin Rot Disease, Marine Vibrios, Marine Anaerobes, Marine Microbial Ecology

H. SUBTASK OBJECTIVES AND METHODOLOGY  
Contamination of inshore fisheries environment by ocean dumping and discharges results in increase in bacterial numbers and types. Disease producing bacteria affect fisheries resources and their utilization. The objective of the subtask is to determine the presence of bacterial pathogens and their relationships which could contribute to the disease process in the fisheries environment.

I. OFFICIAL PREPARING REPORT (Signature) John T. Graikoski                      John B. Pearce	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>John Holbert</i> Carl J. Sindermann CENTER DIRECTOR
---	---



FY - 75

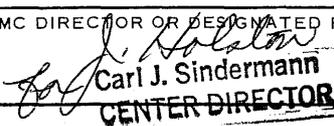
## NMFS SUBTASK PLAN

(See Detailed Instructions)

October 21, 1974

(Submit four copies.)

TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235FMC'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-009-75-IE-A		4. SUB-OBJECTIVE CODE IV-A-3		5. PRIOR DATE N/A	
5. TASK NUMBER 8818P4	7. ORGANIZATION CODE FB6110	8. FACILITY Milford Lab., Conn.		9. PRIOR TDP NO. PLUS STP SUFFIX MAC-009-74-IE-A (02)	
10. SUBTASK SUFFIX 02	11. TASK TITLE Environmental Chemistry and Microbiology				
1. NUMBER OF STP'S 2	12. SUBTASK TITLE Environmental Chemistry; Ocean Dumping				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 103.3K		A. START DATE (Estimated/Firm) N/A		A. NAME Middle Atlantic Coastal Fisheries Center, Ecosystems Investigations, Environmental Microbiology and Chemistry Investigation	
B. TOTAL FUNDS N/A		B. END DATE N/A			
C. SOURCE NMFS		C. CONTRACT/GRANT NUMBER N/A		B. FOR INFORMATION CONTACT: John B. Pearce	
D. MAN YEARS 8.5		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A	
18. SPECIES Up to 20 key species				19. LIFE STAGE(S) Adult and juvenile	
20. WORK LOCATION Middle Atlantic coastal and offshore waters.				21. PERCENT RECREATIONAL 50%	
22. KEY WORDS Heavy metals-sediments, Heavy metals-marine animals					
23. SUBTASK OBJECTIVES AND METHODOLOGY The determination of the spatial and temporal distribution of 7 heavy metals in sediments seawater, surf clams, certain fish species, food chain organisms from areas of the Mid- Atlantic Region. Determine uptake of cadmium, silver in striped bass, cunners--clearance of natural contaminants in oysters. Heavy metal analysis by atomic absorption spectro- scopy-neutron activation.					
24. OFFICIAL PREPARING REPORT (Signature) Richard A. Greig                      John B. Pearce			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)  Carl J. Sindermann CENTER DIRECTOR		

*La Place*  
NMFS SUBTASK PLAN  
26. ACTIVITY SCHEDULE AND EVENTS

MAC-009-76-IE-A (02)

NUMBER EACH ACTIVITY OR 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.

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

A O R E	NARRATIVE (Brief descriptive phrase of activity or event)	Fiscal Year 19 <u>75</u>												Fiscal Year 19 <u>76</u>					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
	Long Island Sound Study																		
A	Trace Metals in the Biota-water	X																	X
E	Manuscript Preparation	X					X												
	New York Bight Study																		
A	Trace Metals in Food Chain Organisms																		
E	Manuscript Preparation				X								X						
	Uptake and Clearance of Metals																		
A	Cadmium - Striped Bass	X								X									
B	Silver - Cunner	X								X									
C	Natural Contaminants - Oysters	X																	X
A	Heavy Metals - Surf Clams	X								X									
A	Heavy Metals - Scallops									X									X
	Delaware-Cheapeake Bay																		
	Heavy metals - animals sediments									X		X							

NOAA FORM 32-15A (4-74)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION		1. FISCAL YEAR 1975
NMFS SUBTASK PLAN (See Detailed Instructions)			2. DATE PREPARED 10/24/74	
(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-012-75-IE-A-1		4. SUB-OBJECTIVE CODE IV-A-2		5. PRIOR DATE 9/17/73
6. TASK NUMBER 8818P5	7. ORGANIZATION CODE FB6300	8. FACILITY Milford Laboratory, MACFC-163		9. PRIOR TDP NO. PLUS STP SUFFIX MAC-012-75-IE-A-1(01)
10. SUBTASK SUFFIX 01	11. TASK TITLE Rearing of Indicator Organisms			
12. NUMBER OF STP'S 2	13. SUBTASK TITLE Culture Methods for Coastal Mollusks			
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION
A. DIRECT FUNDS 26.6K		A. START DATE (Estimated/Firm) N/A		A. NAME Experimental Biology Investigations
B. TOTAL FUNDS N/A		B. END DATE N/A		
C. SOURCE National Marine Fisheries Service		C. CONTRACT/GRANT NUMBER N/A		B. FOR INFORMATION CONTACT: Mr. Warren S. Landers
D. MAN YEARS 1.6		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A
18. SPECIES surf clam, ocean quahog, bay scallop, sea scallop			19. LIFE STAGE(S) all	
20. WORK LOCATION laboratory, MACFC area			21. PERCENT RECREATIONAL 0%	
22. KEY WORDS culture, molluscs				
23. SUBTASK OBJECTIVES AND METHODOLOGY Complete culture method for the surf clam as an indicator organism for contaminants effects. Reactivate studies on culture methods for the ocean quahog and the sea scallop as indicator organisms. Initiate culture methodology development for the bay scallop.				
24. OFFICIAL PREPARING REPORT (Signature) Warren S. Landers James S. Clark Investigation Chief Director of Investigations			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) Carl J. Sindermann CENTER DIRECTOR	

NMFS SUBTASK PLAN  
26. ACTIVITY SCHEDULE AND EVENTS

MAC-012-75-IE-A-1(01)

NUMBER	A OR E	NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 1975												Fiscal Year 1976						
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	
1	A	Investigate effects of environmental factors on the development of surf clam larvae.	X	—	—	—	X	→													
2	A	Develop culture method for juvenile surf clams.	X	—	—	—	X	→													
3	A	Develop year-round ripening and spawning methods for ocean quahogs.	X	—	—	—	X														
4	A	Determine physiological requirements for all developmental stages of the ocean quahog.	X	—	—	—	X														
5	A	Find sources of and holding methods for bay scallops in the laboratory.				X	X	→													
6	E	Some data on effects of temperature and salinity on surf clam larvae.					X														
7	E	Some data on growth of surf clam juveniles in semi-field environment.					X														
8	E	Some data on out-of-season ripening and spawning of the ocean quahog.					X														
9	E	Methods for holding scallops in the laboratory developed.					X														
		Studies on ocean quahog culture will terminate December 31, 1974. Activities 1, 2 and 5 of this Subtask will be incorporated into new Aquaculture Subtasks.																			

1975

10/24/74

## NMFS SUBTASK PLAN

(See Detailed Instructions)

(Submit four copies.)

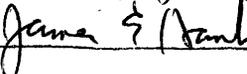
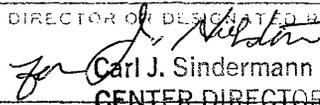
TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235FMC's - Submit one or more Subtask Plans for each task funded for the coming  
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example) then the task segments 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-012-75-IE-A-1		IV-A-2		9/17/73	
6. TASK NUMBER	7. ORGANIZATION CODE	8. FACILITY		9. PRIOR TDP NO. PLUS STP SUFFIX	
8818P5	FB6300	Milford Laboratory, MACFC-163		MAC-012-75-IE-A-1(02)	
10. SUBTASK SUFFIX		11. TASK TITLE			
02		Rearing of Indicator Organisms			
1. NUMBER OF STP'S		12. SUBTASK TITLE			
2		Culture Methods for Marine Decapod Crustaceans			

14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS		A. START DATE (Estimated/Firm)		A. NAME	
26.0		N/A		Experimental Biology Investigations	
B. TOTAL FUNDS		B. END DATE			
N/A		N/A			
C. SOURCE		C. CONTRACT/GRANT NUMBER		B. FOR INFORMATION CONTACT:	
National Marine Fisheries Service		N/A		Mr. Warren S. Landers	
D. MAN YEARS		17 A. COOPERATIVE RESOURCES		17 B. SOURCE	
1.7		N/A		N/A	
8. SPECIES				19. LIFE STAGE(S)	
blue crab, rock crab, American lobster				all	
20. WORK LOCATION				21. PERCENT RECREATIONAL	
laboratory, MACFC area				0%	

22. KEY WORDS	
culture, marine decapods	
23. SUBTASK OBJECTIVES AND METHODOLOGY	

Develop culture methods for marine crabs and lobsters.  
Extend and refine known culture methods.  
Develop new culture techniques where none exist.

24. OFFICIAL PREPARING REPORT (Signature)		25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)	
 Warren S. Landers Investigation Chief  James E. Smith Director of Investigations		 for Carl J. Sindermann CENTER DIRECTOR	



1975

10/24/74

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

(Submit four copies.)

TO: Director, National Marine Fisheries Service, ATTN: Fx5  
National Oceanic and Atmospheric Administration  
Washington, D.C. 20235

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3. TDP NUMBER

MAC-013-75-IE-A-1

4. SUB-OBJECTIVE CODE

IV-A-2

5. PRIOR DATE

9/17/73

6. TASK NUMBER

8818P6

7. ORGANIZATION CODE

FB6300

8. FACILITY

Milford Laboratory-163

9. PRIOR TDP NO. PLUS STP SUFFIX

MAC-013-75-IE-A-1(01)

10. SUBTASK SUFFIX

01

11. TASK TITLE

Pollutants and Phytoplankton Food-chain Species

12. NUMBER OF STP'S

3

13. SUBTASK TITLE

Experimental Effects of Pollutants on Phytoplankton

14. RESOURCES

15. CONTRACT/GRANT INFO.

16. PERFORMING ORGANIZATION

A. DIRECT FUNDS

9.8K

A. START DATE (Estimated/Firm)

N/A

A. NAME

Experimental Biology Investigations

B. TOTAL FUNDS

N/A

B. END DATE

N/A

C. SOURCE

National Marine Fisheries Service

C. CONTRACT/GRANT NUMBER

N/A

B. FOR INFORMATION CONTACT:

Dr. Ravenna Ukeles

D. MAN YEARS

0.5

17 A. COOPERATIVE RESOURCES

N/A

17 B. SOURCE

N/A

18. SPECIES

multi-species

19. LIFE STAGE(S)

all stages

20. WORK LOCATION

laboratory

21. PERCENT RECREATIONAL

0%

22. KEY WORDS

organics, salinity adaptation, alkali metals, phytoplankton growth

23. SUBTASK OBJECTIVES AND METHODOLOGY

The objective is to continue previous work on the effect of inorganic and organic pollutants on marine phytoplankters. Methodology will be to utilize an evaluation of growth responses and some chemical analysis.

24. OFFICIAL PREPARING REPORT (Signature)

*Ravenna Ukeles*  
Investigation Chief  
*James E. Hank*  
Director of Investigations

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)

*Carl J. Sindermann*  
Carl J. Sindermann  
CENTER DIRECTOR



**NMFS SUBTASK PLAN**  
(See Detailed Instructions)

(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.  
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3. TDP NUMBER  
**MAC-013-75-IE-A-1**  
4. SUB-OBJECTIVE CODE  
**IV-A-2**  
5. PRIOR DATE  
**9/17/73**

6. TASK NUMBER  
**8818P6**  
7. ORGANIZATION CODE  
**FB6300**  
8. FACILITY  
**Milford Laboratory-163**  
9. PRIOR TDP NO. PLUS STP SUFFIX  
**MAC-013-75-IE-A-1(02)**

10. SUBTASK SUFFIX  
**02**  
11. TASK TITLE  
**Pollutants and Phytoplankton Food-chain Species**

12. NUMBER OF STP'S  
**3**  
13. SUBTASK TITLE  
**Methods of Cultivation of Phytoplankton**

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS <b>9.8K</b>	A. START DATE (Estimated/Firm) <b>N/A</b>	A. NAME <b>Experimental Biology Investigations</b>
B. TOTAL FUNDS <b>N/A</b>	B. END DATE <b>N/A</b>	
C. SOURCE <b>National Marine Fisheries Service</b>	C. CONTRACT/GRANT NUMBER <b>N/A</b>	B. FOR INFORMATION CONTACT: <b>Dr. Ravenna Ukeles</b>
D. MAN YEARS <b>0.4</b>	17 A. COOPERATIVE RESOURCES <b>N/A</b>	17 B. SOURCE <b>N/A</b>

18. SPECIES  
**multi-species**  
19. LIFE STAGE(S)  
**all stages**

20. WORK LOCATION  
**laboratory**  
21. PERCENT RECREATIONAL  
**0%**

22. KEY WORDS  
**subculture, axenic culture, purification, growth media**

23. SUBTASK OBJECTIVES AND METHODOLOGY  
The objective is to maintain a collection of cultures of unicellular marine algae under controlled conditions for experimental work. Standard methodology as described in publication will be used and novel culture methods will be developed.

24. OFFICIAL PREPARING REPORT (Signature)  
*Ravenna Ukeles*  
**Investigation Chief**  
*James J. Sander*  
**Director of Investigations**

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

NMFS SUBTASK PLAN  
26. ACTIVITY SCHEDULE AND EVENTS

MAC-013-75-IE-A-1(02)

NUMBER A OR E	NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 19 <u>75</u>												Fiscal Year 19 <u>76</u>					
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
		1	A Subculturing of strains in the culture collection in various types of growth media.	X						X									
2	A Developing novel culture methods for long-term viability of strains.	X						X											
3	A Purification of strains as far as possible.	X						X											

NUMBER EACH ACTIVITY OR 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.

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

FORM 32-15A		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION		1. FISCAL YEAR 1975
NMFS SUBTASK PLAN (See Detailed Instructions)			2. DATE PREPARED 10/24/74	
(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.		
P NUMBER C-013-75-IE-A-1		4. SUB-OBJECTIVE CODE IV-A-2		5. PRIOR DATE 9/17/73
SK NUMBER 18P6	7. ORGANIZATION CODE FB6300	8. FACILITY Milford Laboratory-163	9. PRIOR TDP NO. PLUS STP SUFFIX MAC-013-75-IE-A-1(03)	
BTASK SUFFIX	11. TASK TITLE Pollutants and Phytoplankton Food-chain Species			
NUMBER OF STP'S	12. SUBTASK TITLE Mass Cultivation of Phytoplankton Food-chain Species			
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION
DIRECT FUNDS 67		A. START DATE (Estimated/Firm) N/A		A. NAME Experimental Biology Investigations
TOTAL FUNDS N/A		B. END DATE N/A		
SOURCE National Marine Fisheries Service		C. CONTRACT/GRANT NUMBER N/A		B. FOR INFORMATION CONTACT: Dr. Ravenna Ukeles
NUMBER OF YEARS 00.5		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A
SPECIES Multi-species		19. LIFE STAGE(S) all stages		
WORK LOCATION Laboratory		21. PERCENT RECREATIONAL N/A		
KEY WORDS mass culture, marine algae, food-chain species				
SUBTASK OBJECTIVES AND METHODOLOGY Objective is to maintain mass culture of marine algae as a laboratory service and to utilize this system in evaluating certain growth parameters by continuous culture. The existing system will be monitored, sterilized media and axenic cultures utilized for long-term maintenance of mass cultures.				
SIGNATURE OF PREPARING REPORT (Signature) <i>[Signature]</i> Investigation Chief Director of Investigations		25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>[Signature]</i> Carl J. Sindermann		



**NMFS SUBTASK PLAN**  
(See Detailed Instructions)

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

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3. TDP NUMBER: **MAC-014-75-IE-A**      4. SUB-OBJECTIVE CODE: **IV-A-2**      5. PRIOR DATE: **9/17/73**

6. TASK NUMBER: **8818P7**      7. ORGANIZATION CODE: **FB6300**      8. FACILITY: **Milford Laboratory-163**      9. PRIOR TDP NO. PLUS STP SUFFIX: **MAC-014-74-IE-A (01)**

10. SUBTASK SUFFIX: **01**      11. TASK TITLE: **Mutagenic Effects of Pollutants**

12. NUMBER OF STP'S: **4**      13. SUBTASK TITLE: **Induction of Dominant Lethal Mutations in Commercial Oysters and Wild Mussels by Mutagenic Marine Contaminants**

14. RESOURCES		15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS <b>7.70K</b>	A. START DATE (Estimated/Firm) <b>N/A</b>	A. NAME <b>Experimental Biology Investigations</b>	
B. TOTAL FUNDS <b>N/A</b>	B. END DATE <b>N/A</b>		
C. SOURCE <b>National Marine Fisheries Service</b>	C. CONTRACT/GRANT NUMBER <b>N/A</b>	B. FOR INFORMATION CONTACT: <b>Dr. Arlene Longwell</b>	
D. MAN YEARS <b>0.7</b>	17 A. COOPERATIVE RESOURCES <b>N/A</b>	17 B. SOURCE <b>N/A</b>	

18. SPECIES: **commercial American oysters, wild mussels**      19. LIFE STAGE(S): **larval**

20. WORK LOCATION: **laboratory**      21. PERCENT RECREATIONAL: **0%**

22. KEY WORDS: **larval lethal mutations, larval mortality, chronic contaminant exposure**

23. SUBTASK OBJECTIVES AND METHODOLOGY  
Determine the mutagenicity of low-dose chronic exposure of adults to a mutagenic heavy metal and pesticide marine contaminants at levels simulating exposure in nature. Do this by use of the dominant lethal method. Relate lethality of larvae from such mutations to recruitment of these species into the wild resource or fishery. Determine if there is any natural selection for genetic resistance to the pesticide; also, if there is an accumulation of deleterious subvital genes.  
Methodology: Aquaculture of test crosses; dominant lethal gene test; cyto-genetic analysis of test crosses and unfertilized eggs from chronically exposed animals; (OVER)

24. OFFICIAL PREPARING REPORT (Signature)  
*James E. Hanks*  
Investigation Chief  
Director of Investigations

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



1975

## NMFS SUBTASK PLAN

(See Detailed Instructions)

10/24/74

(Submit four copies.)

TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235FMC'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-014-75-IE-A

4. SUB-OBJECTIVE CODE

IV-A-2

5. PRIOR DATE

9/17/73

5. TASK NUMBER

8818P7

7. ORGANIZATION CODE

FB6300

8. FACILITY

Milford Laboratory-163

9. PRIOR TDP NO. PLUS STP  
SUFFIXMAC-014-74-IE-A  
(02)

10. SUBTASK SUFFIX

02

11. TASK TITLE

Mutagenic Effects of Pollutants

12. NUMBER OF STP'S

4

13. SUBTASK TITLE

Analysis Through Fertilized Egg-zygote Stages of Chromosome Damage  
Induced in Oysters and Clams by Mutagenic Marine Contaminants

14. RESOURCES

15. CONTRACT/GRANT INFO.

16. PERFORMING ORGANIZATION

A. DIRECT FUNDS

7.70K

A. START DATE (Estimated/Firm)

N/A

A. NAME

Experimental Biology Investigations

B. TOTAL FUNDS

N/A

B. END DATE

N/A

C. SOURCE

National Marine Fisheries  
Service

C. CONTRACT/GRANT NUMBER

N/A

B. FOR INFORMATION CONTACT:

Dr. Arlene Longwell

D. MAN YEARS

0.7

17 A. COOPERATIVE RESOURCES

N/A

17 B. SOURCE

N/A

8. SPECIES

commercial American oyster, commercial clam,  
wild mussel

19. LIFE STAGE(S)

zygote-embryo

9. WORK LOCATION

laboratory

21. PERCENT RECREATIONAL

0%

2. KEY WORDS

chromosome damage, abnormal and dead zygotes, mutagenic marine contaminants

3. SUBTASK OBJECTIVES AND METHODOLOGY

Appraise the genetic damage sustained to embryos by exposure of their spawned gametes to  
mutagenic heavy metals and a pesticide marine contaminant. Relate loss of experimental  
zygotes to recruitment in the wild resource or fishery.Methodology: Use cyto-genetic methods to detect damage to chromosomes, meiosis and mi-  
toses; laboratory spawning of animals with subsequent exposure of gametes, and devel-  
oping eggs.

4. OFFICIAL PREPARING REPORT (Signature)

A. Longwell  
Investigation Chief  
James E. Hank  
Director of Investigations

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)

J. Sindermann  
Carl J. Sindermann  
CENTER DIRECTOR



**NMFS SUBTASK PLAN**  
(See Detailed Instructions)

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

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3. TDP NUMBER  
MAC-014-75-IE-A  
4. SUB-OBJECTIVE CODE  
IV-A<sub>2</sub>  
5. PRIOR DATE  
9/17/73

6. TASK NUMBER  
8818P7  
7. ORGANIZATION CODE  
FB6300  
8. FACILITY  
Milford Laboratory-163  
9. PRIOR TDP NO. PLUS STP SUFFIX  
MAC-014-74-IE-A  
(03)

10. SUBTASK SUFFIX  
03  
11. TASK TITLE  
Mutagenic Effects of Pollutants

12. NUMBER OF STP'S  
4  
13. SUBTASK TITLE  
Assessment of Genetic Damage to Gametogenesis by Mutagenic Marine Contaminants

14. RESOURCES  
15. CONTRACT/GRANT INFO.  
16. PERFORMING ORGANIZATION

A. DIRECT FUNDS  
7.70K  
A. START DATE (Estimated/Firm)  
N/A  
A. NAME  
Experimental Biology Investigations

B. TOTAL FUNDS  
N/A  
B. END DATE  
N/A

C. SOURCE  
National Marine Fisheries Service  
C. CONTRACT/GRANT NUMBER  
N/A  
B. FOR INFORMATION CONTACT:  
Dr. Arlene Longwell

D. MAN YEARS  
0.7  
17 A. COOPERATIVE RESOURCES  
N/A  
17 B. SOURCE  
N/A

18. SPECIES  
shellfish, groundfish, minnows, crustaceans  
19. LIFE STAGE(S)  
adult - gametogenesis

20. WORK LOCATION  
laboratory  
21. PERCENT RECREATIONAL  
20%

22. KEY WORDS  
cyto-genetic damage, abnormal gametogenesis, reduced fecundity, partial sterility, mutagenic marine contaminants

23. SUBTASK OBJECTIVES AND METHODOLOGY  
Determine the extent of genetic damage done to the gametogenesis of shellfish, groundfish and possibly crustaceans by chronic exposure to heavy metals and pesticides.  
Methodology: Cyto-genetic analysis of gametogenesis by microscope methods; chronic exposure to contaminants; development of cyto-genetic techniques for groundfish and crustaceans.

24. OFFICIAL PREPARING REPORT (Signature)  
*A. Zongwell*  
Investigation Chief  
*James S. Jank*  
Director of Investigations

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



**NMFS SUBTASK PLAN**  
(See Detailed Instructions)

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

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3. TDP NUMBER  
**MAC-014-75-IE-A**

4. SUB-OBJECTIVE CODE  
**IV-A-2**

5. PRIOR DATE  
**None**

6. TASK NUMBER  
**8818P7**

7. ORGANIZATION CODE  
**FB6300**

8. FACILITY  
**Milford Laboratory-163**

9. PRIOR TDP NO. PLUS STP  
SUFFIX  
**MAC-014-74-IE-A  
(-)**

10. SUBTASK SUFFIX  
**04**

11. TASK TITLE  
**Mutagenic Effects of Pollutants**

12. NUMBER OF STP'S  
**4**

13. SUBTASK TITLE  
**Approach via Study of Dominant Lethals, Chromosome Breakage and  
Cyto-genetic Aberrations of Gametogenesis**

14. RESOURCES

15. CONTRACT/GRANT INFO.

16. PERFORMING ORGANIZATION

A. DIRECT FUNDS  
**15.4**

A. START DATE (Estimated/Firm)  
**N/A**

A. NAME  
**Experimental Biology Investigations**

B. TOTAL FUNDS  
**N/A**

B. END DATE  
**N/A**

C. SOURCE  
**National Marine  
Fisheries Service**

C. CONTRACT/GRANT NUMBER  
**N/A**

B. FOR INFORMATION CONTACT:  
**Dr. Arlene Longwell**

D. MAN YEARS  
**1.3**

17 A. COOPERATIVE RESOURCES  
**N/A**

17 B. SOURCE  
**N/A**

18. SPECIES **various commercial shellfish, commercial  
crustaceans, groundfish, cunners and tuna**

19. LIFE STAGE(S)  
**gametes, cleaving eggs, early stage  
larvae, sexually maturing adults**

20. WORK LOCATION  
**laboratory**

21. PERCENT RECREATIONAL

22. KEY WORDS **heavy metals, pesticides, chromosome breakage, gene mutation, dominant lethal  
genes, genetic aberrations of cell division, defective gametes, genetically unbalanced  
embryos, defective and dead larvae, reduced recruitment, sterility of adults, lack of  
adult vigor, selection for genetic resistance to chronic pollution.**

23. SUBTASK OBJECTIVES AND METHODOLOGY  
**Appraise the genetic damage to embryos inflicted by exposure of spawned gametes to  
mutagenic heavy metal and pesticide contaminants; determine the mutagenicity of low-dose  
chronic exposure of adults to same; determine extent of genetic damage done to gameto-  
genesis by mutagenic contaminants. Determine effects of all such on recruitment into  
the fisheries.**

24. OFFICIAL PREPARING REPORT (Signature)  
**A. Longwell**  
**James G. Jantz**  
Investigation Chief  
Director of Investigations

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





1. FISCAL YEAR  
1975  
2. DATE PREPARED  
10/24/74

### NMFS SUBTASK PLAN

(See Detailed Instructions)

(Submit four copies.)

TO: Director, National Marine Fisheries Service, ATTN: Fx5 National Oceanic and Atmospheric Administration Washington, D.C. 20235

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TDP NUMBER: MAC-015-75-IE-A-1  
4. SUB-OBJECTIVE CODE: IV-A-2  
5. PRIOR DATE: 9/17/73

TASK NUMBER: 8818P8  
7. ORGANIZATION CODE: FB6300  
8. FACILITY: Milford Laboratory-163  
9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-015-75-IE-A-1(01)

0. SUBTASK SUFFIX: 01  
11. TASK TITLE: Physiological Effects of Pollutant Stress

2. NUMBER OF STP'S: 3  
13. SUBTASK TITLE: Physioecology

14. RESOURCES  
15. CONTRACT/GRANT INFO.  
16. PERFORMING ORGANIZATION

1. DIRECT FUNDS: 80.0K  
A. START DATE (Estimated/Firm): N/A  
A. NAME: Experimental Biology Investigations

3. TOTAL FUNDS: N/A  
B. END DATE: N/A

C. SOURCE: National Marine Fisheries Service  
C. CONTRACT/GRANT NUMBER: N/A  
B. FOR INFORMATION CONTACT: Dr. Anthony Calabrese

6. MAN YEARS: 3.8  
17 A. COOPERATIVE RESOURCES: N/A  
17 B. SOURCE: N/A

8. SPECIES: multi-species  
19. LIFE STAGE(S): all

10. WORK LOCATION: laboratory  
21. PERCENT RECREATIONAL: 30%

12. KEY WORDS: bivalves, crustaceans, finfish; exposures, heavy metals, bioassay, pollutants

3. 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 8818P802 and 8818P803.

4. OFFICIAL PREPARING REPORT (Signature)  
Anthony Calabrese Investigation Chief  
James E. ... Director of Investigations

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



1975

10/24/74

**NMFS SUBTASK PLAN**

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TO: Director, National Marine Fisheries Service, ATTN: Fx5  
National Oceanic and Atmospheric Administration  
Washington, D.C. 20235

3. TDP NUMBER MAC-015-75-IE-A-1		4. SUB-OBJECTIVE CODE IV-A-2		5. PRIOR DATE 9/17/73
6. TASK NUMBER 8818P8	7. ORGANIZATION CODE FB6300	8. FACILITY Milford Laboratory-163		9. PRIOR TDP NO. PLUS STP SUFFIX MAC-015-75-IE-A-1(02)
10. SUBTASK SUFFIX 02	11. TASK TITLE Physiological Effects of Pollutant Stress			
12. NUMBER OF STP'S 3	13. SUBTASK TITLE Physiological Effects			

14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 60.0K		A. START DATE (Estimated/Firm) N/A		A. NAME Experimental Biology Investigations	
B. TOTAL FUNDS N/A		B. END DATE N/A			
C. SOURCE National Marine Fisheries Service		C. CONTRACT/GRANT NUMBER N/A		B. FOR INFORMATION CONTACT: Dr. Anthony Calabrese	
D. MAN YEARS 3.0		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A	
E. SPECIES multi-species				19. LIFE STAGE(S) all	
F. WORK LOCATION laboratory				21. PERCENT RECREATIONAL 30%	

2. KEY WORDS  
physiology, bivalves, crustaceans, fish, respiration, oxygen consumption, osmoregulation, metals, pollutants, heart, amino acids

3. 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 8818P801 and 8818P803.

4. OFFICIAL PREPARING REPORT (Signature) <i>Anthony Calabrese</i> Investigation Chief <i>James E. Smith</i> Director of Investigations	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl J. Sindermann</i> CENTER DIRECTOR
--	---



1975

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

10/24/74

(Submit four copies.)

TO: Director, National Marine Fisheries Service, ATTN: Fx5 National Oceanic and Atmospheric Administration Washington, D.C. 20235

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3. TDP NUMBER MAC-015-75-IE-A-1		4. SUB-OBJECTIVE CODE IV-A-2		5. PRIOR DATE 9/17/73	
5. TASK NUMBER 8818P8	7. ORGANIZATION CODE FB 6300	8. FACILITY Milford Laboratory-163		9. PRIOR TDP NO. PLUS STP SUFFIX MAC-015-75-IE-A-1(03)	
10. SUBTASK SUFFIX 03	11. TASK TITLE Physiological Effects of Pollutant Stress				
12. NUMBER OF STP'S 3	13. SUBTASK TITLE Biochemical Effects				

14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 20.1K		A. START DATE (Estimated/Firm) N/A		A. NAME Experimental Biology Investigations	
B. TOTAL FUNDS N/A		B. END DATE N/A			
C. SOURCE National Marine Fisheries Service		C. CONTRACT/GRANT NUMBER N/A		B. FOR INFORMATION CONTACT: Dr. Anthony Calabrese	
D. MAN YEARS 1.0		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A	
8. SPECIES multi-species				19. LIFE STAGE(S) all	
20. WORK LOCATION laboratory				21. PERCENT RECREATIONAL 30%	

2. KEY WORDS  
biochemistry, enzymes, transaminase, carbonic anhydrase, hemocyanin, blood, protein, heart, liver, enzymography, gills, molluscs, crustaceans, finfish

3. SUBTASK OBJECTIVES AND METHODOLOGY  
Determine the sublethal biochemical 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 8818P801 and 8818P802.

4. OFFICIAL PREPARING REPORT (Signature) Anthony Calabrese Investigation Chief Director of Investigations	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) Carl J. Sindermann CENTER DIRECTOR
--	--



1975

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

10/25/74

(Submit four copies.)

TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235

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3. TDP NUMBER

MAC-016-75-LS-A-1

4. SUB-OBJECTIVE CODE

II-E-3

5. PRIOR DATE

Sept. 11, 1973

6. TASK NUMBER

8817P1

7. ORGANIZATION CODE

FB6400

8. FACILITY

164

9. PRIOR TDP NO. PLUS STP SUFFIX

MAC-016-75-LS-A-1  
(00)

10. SUBTASK SUFFIX

01

11. TASK TITLE

Life Studies - Comparative Pathobiology

1. NUMBER OF STP'S

5

12. SUBTASK TITLE

Molluskan Pathobiology

14. RESOURCES

15. CONTRACT/GRANT INFO.

16. PERFORMING ORGANIZATION

A. DIRECT FUNDS

40. OK

A. START DATE (Estimated/Firm)

N/A

A. NAME

Pathobiology Investigations

B. TOTAL FUNDS

N/A

B. END DATE

N/A

C. SOURCE

NMFS

C. CONTRACT/GRANT NUMBER

N/A

B. FOR INFORMATION CONTACT:

Dr. Aaron Rosenfield

D. MAN YEARS

2.5

17 A. COOPERATIVE RESOURCES

N/A

17 B. SOURCE

N/A

E. SPECIES

Oysters, clams, mussels (bivalves)

19. LIFE STAGE(S)

Juvenile and Adult

F. WORK LOCATION

Laboratory and nationally

21. PERCENT RECREATIONAL

N/A

G. KEY WORDS

Diseases of mollusks (mortality, pathology--oysters, clams, mussels)

H. 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.

I. OFFICIAL PREPARING REPORT (Signature)

Dr. Aaron Rosenfield

J. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)

for Carl J. Sindermann  
CENTER DIRECTOR



1975

10/25/74

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

(Submit four copies.)

TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235

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3. TDP NUMBER

MAC-016-75-LS-A-1

4. SUB-OBJECTIVE CODE

II-E-3

5. PRIOR DATE

Sept. 11, 1973

6. TASK NUMBER

3817P1

7. ORGANIZATION CODE

FB6400

8. FACILITY

164

9. PRIOR TDP NO. PLUS STP SUFFIX

MAC-016-75-LS-A-1  
(01)

10. SUBTASK SUFFIX

02

11. TASK TITLE

Life Studies - Comparative Pathobiology

11. NUMBER OF STP'S

5

12. SUBTASK TITLE

Crustacean Pathobiology

14. RESOURCES

15. CONTRACT/GRANT INFO.

16. PERFORMING ORGANIZATION

14. DIRECT FUNDS

20.0K

A. START DATE (Estimated/Firm)

N/A

A. NAME

Pathobiology Investigations

14. TOTAL FUNDS

N/A

B. END DATE

N/A

B. FOR INFORMATION CONTACT:

Dr. Aaron Rosenfield

14. SOURCE

NMFS

C. CONTRACT/GRANT NUMBER

N/A

17 B. SOURCE

N/A

14. MAN YEARS

1

17 A. COOPERATIVE RESOURCES

N/A

19. LIFE STAGE(S)

Juvenile and adult

14. SPECIES

Crabs, lobsters, shrimps, prawns

14. WORK LOCATION

Nationally and laboratory

21. PERCENT RECREATIONAL

N/A

14. KEY WORDS

Diseases of crustaceans (mortality, pathology--crabs, lobsters, shrimps, prawns)

14. SUBTASK OBJECTIVES AND METHODOLOGY

To determine pathology of virus-infected, Paramoeba-infected, and cadmium-exposed blue crabs, and pathology of shrimp with lesions of the exoskeleton, collected in the N. Y. light. To provide a practical atlas of histology of the normal blue crab. The above to be investigated through histological and histochemical techniques. To investigate in the laboratory, transmission and course of infection of a virus and of Paramoeba in the blue crab.

14. OFFICIAL PREPARING REPORT (Signature)

Dr. Aaron Rosenfield

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)

Carl J. Sindermann  
CENTER DIRECTOR



1975

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

10/25/75

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Washington, D.C. 20235

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TDP NUMBER AC-016-75-LS-A-1		4. SUB-OBJECTIVE CODE II-E-3		5. PRIOR DATE Sept. 11, 1973	
TASK NUMBER 3817P1	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 5	12. SUBTASK TITLE Fish Pathobiology				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
DIRECT FUNDS 20,000	A. START DATE (Estimated/Firm) N/A	A. NAME Pathobiology Investigations			
TOTAL FUNDS N/A	B. END DATE N/A				
SOURCE NMFS	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield			
MAN YEARS 1	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A			
18. SPECIES Fin Fish		19. LIFE STAGE(S) Juvenile and adult			
20. WORK LOCATION Laboratory		21. PERCENT RECREATIONAL N/A			
22. KEY WORDS Diseases of fish (mortality, pathology - fish)					
23. SUBTASK OBJECTIVES AND METHODOLOGY					
24. OFFICIAL PREPARING REPORT (Signature) Carl J. Rosenfield			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) Carl J. Sindermann CENTER DIRECTOR		



1975

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

10/25/74

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TDP NUMBER MAC-016-75-LS-A-1		4. SUB-OBJECTIVE CODE II-E-3	5. PRIOR DATE Sept. 11, 1973
TASK NUMBER 8817P1	7. ORGANIZATION CODE FB6400	8. FACILITY 164	9. PRIOR TDP NO. PLUS STP SUFFIX MAC-016-75-LS-A-1 (03)
10. SUBTASK SUFFIX 04	11. TASK TITLE Life Studies - Comparative Pathobiology		
13. NUMBER OF STP'S 5	12. SUBTASK TITLE Histological Services		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS 40.0K	A. START DATE (Estimated/Firm) N/A	A. NAME Pathobiology Investigations
TOTAL FUNDS N/A	B. END DATE N/A	
SOURCE NMFS	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield
MAN YEARS 2.5	17 A. COOPERATIVE RESOURCES N/A	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

18. KEY WORDS  
Diseases of fish, crustaceans, and mollusks (mortality, pathology)

20. SUBTASK OBJECTIVES AND METHODOLOGY  
To prepare all histological materials for the Comparative Pathobiology task (blocking, sectioning, staining).

24. OFFICIAL PREPARING REPORT (Signature) Dr. Aaron Rosenfield	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) Carl J. Sindermann CENTER DIRECTOR
---	--



1975

10/25/74

**NMFS SUBTASK PLAN**

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TO: Director, National Marine  
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Washington, D.C. 20235

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3. TDP NUMBER MAC-016-75-LS-A-1		4. SUB-OBJECTIVE CODE II-E-3		5. PRIOR DATE New	
6. TASK NUMBER 8817P1	7. ORGANIZATION CODE FB6400	8. FACILITY 163	9. PRIOR TDP NO. PLUS STP SUFFIX MAC-016-75-LS-A-1 (04)		
10. SUBTASK SUFFIX 05	11. TASK TITLE Life Studies - Comparative Pathobiology				
1. NUMBER OF STP'S 5	12. SUBTASK TITLE Diseases of Larval Mollusks				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 20.4K	A. START DATE (Estimated/Firm) N/A	A. NAME Pathobiology Investigations			
B. TOTAL FUNDS N/A	B. END DATE N/A	B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield			
C. SOURCE NMFS	C. CONTRACT/GRANT NUMBER N/A				
D. MAN YEARS 1	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A			
18. SPECIES Mollusks (Bivalves)			19. LIFE STAGE(S) Larval and juvenile		
20. WORK LOCATION National and laboratory			21. PERCENT RECREATIONAL N/A		
2. KEY WORDS Diseases of larval mollusks (mortality, pathology)					
3. SUBTASK OBJECTIVES AND METHODOLOGY Utilizing conventional and newly developed bacteriologic techniques, isolate and identify microorganisms in cultures of bivalve mollusks. Develop physical methods (including ozonization) for the elimination of microbial pathogens and toxins. Provide consultative services to industry and Sea Grant institutions involved in aquaculture.					
4. OFFICIAL PREPARING REPORT (Signature) Dr. Aaron Rosenfield			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) Carl J. Sindermann CENTER DIRECTOR		



OAA FORM 32-15A -74)	U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	1. FISCAL YEAR <div style="text-align: center; font-size: 1.2em;">1975</div>
<b>NMFS SUBTASK PLAN</b> (See Detailed Instructions)		2. DATE PREPARED <div style="text-align: center; font-size: 1.2em;">10/25/74</div>

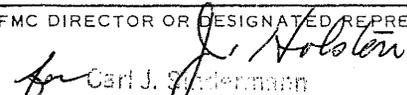
(Submit four copies.) TO: Director, National Marine Fisheries Service, ATTN: Fx5 National Oceanic and Atmospheric Administration Washington, D.C. 20235	FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP. If a Task is conducted at two or more facilities ( <i>Sandy Hook and Oxford, for example</i> ) 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.
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TDP NUMBER <b>MAC-017-75-1E-A-1</b>		4. SUB-OBJECTIVE CODE <div style="text-align: center; font-size: 1.2em;">IV-A-3</div>	5. PRIOR DATE <div style="text-align: center; font-size: 1.2em;">Sept. 11, 1973</div>
TASK NUMBER <b>8818P9</b>	7. ORGANIZATION CODE <div style="text-align: center; font-size: 1.2em;">FB6400</div>	8. FACILITY <div style="text-align: center; font-size: 1.2em;">161</div>	9. PRIOR TDP NO. PLUS STP SUFFIX <b>MAC-017-75-1E-A-1 (00)</b>
10. SUBTASK SUFFIX <div style="text-align: center; font-size: 1.2em;">01</div>	11. TASK TITLE <div style="text-align: center; font-size: 1.2em;">Disease and Environmental Stress</div>		
13. NUMBER OF STP'S <div style="text-align: center; font-size: 1.2em;">5</div>	12. SUBTASK TITLE <div style="text-align: center; font-size: 1.2em;">Fin Rot Disease in the New York Bight</div>		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS <div style="text-align: center; font-size: 1.2em;">33,0K</div>	A. START DATE ( <i>Estimated/Firm</i> ) <div style="text-align: center; font-size: 1.2em;">N/A</div>	A. NAME <div style="text-align: center; font-size: 1.2em;">Pathobiology Investigations</div>
TOTAL FUNDS <div style="text-align: center; font-size: 1.2em;">N/A</div>	B. END DATE <div style="text-align: center; font-size: 1.2em;">N/A</div>	
SOURCE <div style="text-align: center; font-size: 1.2em;">NMFS</div>	C. CONTRACT/GRANT NUMBER <div style="text-align: center; font-size: 1.2em;">N/A</div>	B. FOR INFORMATION CONTACT: <div style="text-align: center; font-size: 1.2em;">Dr. Aaron Rosenfield</div>
MAN YEARS <div style="text-align: center; font-size: 1.2em;">1.5</div>	17 A. COOPERATIVE RESOURCES <div style="text-align: center; font-size: 1.2em;">N/A</div>	17 B. SOURCE <div style="text-align: center; font-size: 1.2em;">N/A</div>
18. SPECIES <div style="text-align: center; font-size: 1.2em;">Fluke and winter flounder</div>		19. LIFE STAGE(S) <div style="text-align: center; font-size: 1.2em;">Juveniles and adult</div>
20. WORK LOCATION <div style="text-align: center; font-size: 1.2em;">Laboratory and New York Bight</div>		21. PERCENT RECREATIONAL <div style="text-align: center; font-size: 1.2em;">N/A</div>

22. KEY WORDS  
 Fin Rot, Fin Erosion, Diseases of Fish

23. SUBTASK OBJECTIVES AND METHODOLOGY  
 The objective is to determine the prevalence and pathogenesis of fin rot disease in winter flounder (and summer flounder) from the New York Bight. Methodology consists of trawl surveys, entrapment studies, and histopathological examination of diseased fish.

24. OFFICIAL PREPARING REPORT ( <i>Signature</i> ) <div style="text-align: center; font-size: 1.2em;">             Dr. Aaron Rosenfield         </div>	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE ( <i>Signature</i> ) <div style="text-align: center; font-size: 1.2em;">             Carl J. Siedlermann            CENTER DIRECTOR         </div>
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*(Submit four copies.)*  
 TO: Director, National Marine Fisheries Service, ATTN: Fx5 National Oceanic and Atmospheric Administration Washington, D.C. 20235

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TDP NUMBER <b>MAC-017-75-1E-A-1</b>		4. SUB-OBJECTIVE CODE <b>IV-A-3</b>	5. PRIOR DATE <b>New</b>
TASK NUMBER <b>818P9</b>	7. ORGANIZATION CODE <b>FB6400</b>	8. FACILITY <b>163</b>	9. PRIOR TDP NO. PLUS STP SUFFIX <b>MAC-017-75-1E-A-1 (01)</b>
10. SUBTASK SUFFIX <b>12</b>	11. TASK TITLE <b>Disease and Environmental Stress</b>		
13. NUMBER OF STP'S <b>5</b>	12. SUBTASK TITLE <b>Immunity in Marine Fish</b>		

14. RESOURCES		15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
DIRECT FUNDS <b>16.5K</b>	A. START DATE ( <i>Estimated/Firm</i> ) <b>N/A</b>		A. NAME <b>Pathobiology Investigations</b>
TOTAL FUNDS <b>N/A</b>	B. END DATE <b>N/A</b>		
SOURCE <b>MFS</b>	C. CONTRACT/GRANT NUMBER <b>N/A</b>		B. FOR INFORMATION CONTACT: <b>Dr. Aaron Rosenfield</b>
MAN YEARS <b>0.4</b>	17 A. COOPERATIVE RESOURCES <b>N/A</b>	17 B. SOURCE <b>N/A</b>	
18. SPECIES <b>Fish</b>			19. LIFE STAGE(S) <b>Adult</b>
20. WORK LOCATION <b>Laboratory</b>			21. PERCENT RECREATIONAL <b>N/A</b>

22. KEY WORDS  
**Immunity, Disease, Infection**

23. SUBTASK OBJECTIVES AND METHODOLOGY

(A) Determine whether pollution reduces immunity to bacterial disease agents in fish and (B) attempt to link fish diseases to raised serum antibody titers against specific bacteria. This will be accomplished by examination of antibody response and cellular defenses of fish in environmental and laboratory settings. A variety of immunological and biochemical tests will be applied to analyze fish immune systems under synergistic stress of pollutants and exposure to bacterial pathogens.

24. OFFICIAL PREPARING REPORT ( <i>Signature</i> ) <i>Aaron Rosenfield</i> <b>Dr. Aaron Rosenfield</b>	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE ( <i>Signature</i> ) <i>Carl J. Sindermann</i> <b>CENTER DIRECTOR</b>
--	---



1. FISCAL YEAR 1975
2. DATE PREPARED 10/25/74

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TDP NUMBER MAC-017-75-1E-A-1		4. SUB-OBJECTIVE CODE IV-A-3	5. PRIOR DATE Sept. 11, 1973
TASK NUMBER 3818P9	7. ORGANIZATION CODE FB6400	8. FACILITY 164	9. PRIOR TDP NO. PLUS STP MAC-017-75-1E-A-1 (02)
10. SUBTASK SUFFIX 03	11. TASK TITLE Disease and Environmental Stress		
13. NUMBER OF STP'S 5	12. SUBTASK TITLE Microfauna of Fish, Crustaceans, and Mollusks		

14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 16.5K		A. START DATE (Estimated/Firm) N/A		A. NAME Pathobiology Investigations	
B. TOTAL FUNDS N/A		B. END DATE N/A			
C. SOURCE NMFS		C. CONTRACT/GRANT NUMBER N/A		B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield	
D. MAN YEARS 0.4		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A	
E. SPECIES fish, crustaceans, mollusks				19. LIFE STAGE(S) Juvenile and adult	
F. WORK LOCATION laboratory				21. PERCENT RECREATIONAL N/A	

18. KEY WORDS  
amoebae, ciliates, microfauna, parasites, protozoa--fish, crustaceans, mollusks

20. SUBTASK OBJECTIVES AND METHODOLOGY  
(1) Isolate and identify protozoa in water column and sediment from sites in N. Y. Bight by microscopic observation of organisms present in samples. (2) Identify organisms associated with "gill fouling" in Crustacea from N. Y. Bight by studying stained gills in histologic sections. (3) Determine prevalence of sporozoan parasites in blood issues of Atlantic mackerel. (4) Investigate role of protozoa in diseases of cultured hellfish larvae by isolating organisms from water and tissues.

24. OFFICIAL PREPARING REPORT (Signature) Dr. Aaron Rosenfield	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) for Carl J. Sindermann CENTER DIRECTOR
---	--



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TO: Director, National Marine Fisheries Service, ATTN: Fx5 National Oceanic and Atmospheric Administration Washington, D.C. 20235

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3. TDP NUMBER: MAC-017-75-1E-A-1  
4. SUB-OBJECTIVE CODE: IV-A-3  
5. PRIOR DATE: Sept. 11, 1973

6. TASK NUMBER: 8818P9  
7. ORGANIZATION CODE: FB6400  
8. FACILITY: 164  
9. PRIOR TDP NO. PLUS STP SUFFIX: MAC-017-75-1E-A-1 (03)

10. SUBTASK SUFFIX: 04  
11. TASK TITLE: Disease and Environmental Stress

13. NUMBER OF STP'S: 5  
12. SUBTASK TITLE: Ultrastructural studies of normal and physiologically stressed crabs, fish, and mollusks

14. RESOURCES  
15. CONTRACT/GRANT INFO.  
16. PERFORMING ORGANIZATION

A. DIRECT FUNDS: 33.0K  
A. START DATE (Estimated/Firm): N/A  
A. NAME: Pathobiology Investigations

B. TOTAL FUNDS: N/A  
B. END DATE: N/A

C. SOURCE: NMFS  
C. CONTRACT/GRANT NUMBER: N/A  
B. FOR INFORMATION CONTACT: Dr. Aaron Rosenfield

D. MAN YEARS: 1.4  
17 A. COOPERATIVE RESOURCES: N/A  
17 B. SOURCE: N/A

B. SPECIES: Fish, crabs, mollusks  
19. LIFE STAGE(S): Juvenile & adult

D. WORK LOCATION: Laboratory  
21. PERCENT RECREATIONAL: N/A

22. KEY WORDS: Cytology, electron microscopy, ultrastructure, cytopathology--fish, crabs, mollusks

23. SUBTASK OBJECTIVES AND METHODOLOGY: Utilizing conventional ultrastructural procedures of fixation, embedment, and sectioning, normal and pathologic tissues of blue crabs, winter flounder, striped bass, and mackerel will be studied with the electron microscope. In addition to examining animals having naturally occurring diseases, experiments involving experimental procedures in pathology will also be employed to augment certain studies.

24. OFFICIAL PREPARING REPORT (Signature): Dr. Aaron Rosenfield  
25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature): Carl J. Sindermann, CENTER DIRECTOR

NMFS SUBTASK PLAN  
26. ACTIVITY SCHEDULE AND EVENTS

MAC-017-75-1E-A-1  
04

NUMBER EACH ACTIVITY OR 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.

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

A O E	NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 1975												Fiscal Year 1976						
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	
		A	Ultrastructural studies of tissues and cells from normal and diseased blue crabs.	X																
M	Submission for publication of a manuscript on the fine structure of hemocytes from the blue crab					X														
M	Submission for publication of a short paper on the occurrence of a possible virus disease in the blue crab (coauthor)				X															
A	Ultrastructural studies of selected epithelial tissues from normal and diseased fish	X																	X	
E	Complete evaluation of EM data on normal and diseased (fin rot) winter flounder from the New York Bight area						X													
M	Submission of a manuscript on the EM cytopathology of fin rot disease in winter flounder from the New York Bight area										X									
E	Complete evaluation of wound repair data on the winter flounder at the fine structural level								X											
M	Submission of a manuscript on the cytology of the wound repair process in the winter flounder											X								
A	Ultrastructural studies on blood and phagocytic cells from normal and diseased striped bass and winter flounder					X													X	
E	*Completion of fine structure studies of blood and phagocytic cells from the striped bass and winter flounder														X					
E	*Collection and examination of red blood cells from mackerel parasitized by hemogregarine-like parasites													X						
	*Items 9, 10, and 11 are preliminary investigations the outcome of which cannot realistically be determined at this time.																			

NOAA FORM 32-15A -74)	U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	1. FISCAL YEAR <div style="text-align: center; border: 1px solid black; padding: 2px;">1975</div>
<b>NMFS SUBTASK PLAN</b> (See Detailed Instructions)		2. DATE PREPARED <div style="text-align: center; border: 1px solid black; padding: 2px;">10/25/74</div>

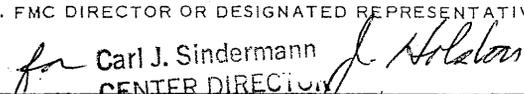
(Submit four copies.) TO: Director, National Marine Fisheries Service, ATTN: Fx5 National Oceanic and Atmospheric Administration Washington, D.C. 20235	FMC's - Submit one or more Subtask Plans for each task funded for the coming fiscal year. Total Direct Funds for the set of STP's within a TDP must equal the Direct Funds of the TDP. If a Task is conducted at two or more facilities ( <i>Sandy Hook and Oxford, for example</i> ) 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.
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3. TDP NUMBER <b>MAC-017-75-1E-A-1</b>		4. SUB-OBJECTIVE CODE <b>IV-A-3</b>	5. PRIOR DATE <b>Sept. 11, 1973</b>
6. TASK NUMBER <b>8818P9</b>	7. ORGANIZATION CODE <b>FB6400</b>	8. FACILITY <b>164</b>	9. PRIOR TDP NO. PLUS STP SUFFIX <b>MAC-017-75-1E-A-1 (04)</b>
10. SUBTASK SUFFIX <b>05</b>	11. TASK TITLE <b>Disease and Environmental Stress</b>		
13. NUMBER OF STP'S <b>5</b>	12. SUBTASK TITLE <b>Registry of Marine Pathology</b>		

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS <b>16.6K</b>	A. START DATE (Estimated/Firm) <b>N/A</b>	A. NAME <b>Pathobiology Investigations</b>
B. TOTAL FUNDS <b>N/A</b>	B. END DATE <b>N/A</b>	
C. SOURCE <b>NMFS</b>	C. CONTRACT/GRANT NUMBER <b>N/A</b>	B. FOR INFORMATION CONTACT: <b>Dr. Aaron Rosenfield</b>
D. MAN YEARS <b>0.4</b>	17 A. COOPERATIVE RESOURCES <b>N/A</b>	17 B. SOURCE <b>N/A</b>
E. SPECIES <b>Fish, crustaceans, mollusks</b>		19. LIFE STAGE(S) <b>Larval, juvenile, adult</b>
F. WORK LOCATION <b>Laboratory</b>		21. PERCENT RECREATIONAL <b>N/A</b>

22. KEY WORDS  
**Disease, mortality, pathology--fish, crustaceans, mollusks**

23. SUBTASK OBJECTIVES AND METHODOLOGY  
 To establish, collect, catalogue, maintain, and provide curatorial and custodial service on a continuing basis for a permanent national Registry of Marine Pathology, consisting of type specimens, photographs, and published literature relating to pathology in marine and estuarine poikilotherms. Accessions will be gathered by solicitation from the scientific community and registry materials will be available for study by qualified scientific and technical workers.

24. OFFICIAL PREPARING REPORT (Signature) <div style="text-align: center;">   <b>Dr. Aaron Rosenfield</b> </div>	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <div style="text-align: center;">   <b>for Carl J. Sindermann</b>  <b>CENTER DIRECTOR</b> </div>
--	---

**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

NUMBER EACH ACTIVITY OR EVENT.

PLANNING PERIOD Indicated 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.

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

A O R E

**NARRATIVE**

*(Brief descriptive phrase of activity or event)*

Fiscal Year 1975

Fiscal Year 1976

Fiscal Year 1975												Fiscal Year 1976					
1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
	X										X						
				X													X
		X															
			X														
			X														X
						X											
						X											X
												X					

- A Establish policy and methodology
- A Review and revise policy and methodology
- E Initial solicitation of accessions ✓
- E Develop accession entry form ✓
- E Receive and catalogue initial accessions ✓
- A Receive and catalogue new accessions
- M Publish fist catalogue ✓
- A Solicit contributions outside NMFS
- E Conduct 1st annual review



**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

NUMBER EACH ACTIVITY OR 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.

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

NUMBER	A OR E	NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 1975												Fiscal Year 1976					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
			1	A	Sort and identify ichthyoplankton from spring (FY 74) cruise. →	X			X											
2	A	Compile and provide spring (FY 74) cruise data to user groups.				X	X													
3	A	Plan and conduct fall survey cruise.			X	X														
4	A	Sort and identify ichthyoplankton from fall cruise.					X					X								
5	A	Compile and provide fall cruise data to user groups.										X	X							
6	A	Plan and conduct spring survey cruise.									X	X								
7	A	Sort and identify ichthyoplankton from spring cruise.											X					X		

1975

## NMFS SUBTASK PLAN

(See Detailed Instructions)

10/25/74

(Submit four copies.)

TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235FMC'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 <b>MAC-053-75-LS-A-1</b>		4. SUB-OBJECTIVE CODE <b>II-C-2</b>		5. PRIOR DATE <b>10/10/73</b>	
5. TASK NUMBER <b>8817P2</b>		7. ORGANIZATION CODE <b>FB6200</b>		8. FACILITY <b>MACFC - 162</b>	
9. PRIOR TDP NO. PLUS STP SUFFIX <b>MA53-74 (02)</b>		10. SUBTASK SUFFIX <b>02</b>		11. TASK TITLE <b>Resource Assessment - Ichthyoplankton of the Middle Atlantic Bight</b>	
11. NUMBER OF STP'S <b>3</b>		12. SUBTASK TITLE <b>Diurnal Activities of Young Fishes - Field Work</b>			
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS <b>9.2</b>		A. START DATE ( <i>Estimated/Firm</i> ) <b>N/A</b>		A. NAME <b>Resource Assessment Investigations</b>	
B. TOTAL FUNDS <b>N/A</b>		B. END DATE <b>N/A</b>			
C. SOURCE <b>NMFS</b>		C. CONTRACT/GRANT NUMBER <b>N/A</b>		B. FOR INFORMATION CONTACT: <b>Dr. Arthur S. Merrill</b>	
D. MAN YEARS <b>0.1</b>		17 A. COOPERATIVE RESOURCES <b>N/A</b>		17 B. SOURCE <b>N/A</b>	
18. SPECIES <b>Multispecies: larval fish</b>				19. LIFE STAGE(S) <b>Larval, juvenile</b>	
20. WORK LOCATION <b>Middle Atlantic Bight</b>				21. PERCENT RECREATIONAL <b>50%</b>	
22. KEY WORDS <b>Diurnal movements of larval fish. Larval fish distribution. Year class success. Larval fish transport. Environmental correlation. Larval bluefish</b>					
23. SUBTASK OBJECTIVES AND METHODOLOGY <b>Plan and conduct summer cruise in Middle Atlantic Bight to study diurnal activities of young bluefish 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.</b>					
24. OFFICIAL PREPARING REPORT ( <i>Signature</i> ) 			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE ( <i>Signature</i> ) 		



1975

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

10/25/74

(Submit four copies.)

TO: Director, National Marine  
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National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235

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3. TDP NUMBER

4. SUB-OBJECTIVE CODE

5. PRIOR DATE

MAC-053-75-LS-A-1

II-C-2

10/10/73

6. TASK NUMBER

7. ORGANIZATION CODE

8. FACILITY

9. PRIOR TDP NO. PLUS STP SUFFIX

8817P2

FB6200

MACFC - 162

MA53-74 (03)

10. SUBTASK SUFFIX

11. TASK TITLE

03

Resource Assessment - Ichthyoplankton of the Middle Atlantic Bight

1. NUMBER OF STP'S

12. SUBTASK TITLE

3

Analysis and Preparation of In-House Data for Publication

14. RESOURCES

15. CONTRACT/GRANT INFO.

16. PERFORMING ORGANIZATION

A. DIRECT FUNDS

A. START DATE (Estimated/Firm)

A. NAME

52.3

N/A

Resource Assessment Investigations

B. TOTAL FUNDS

B. END DATE

N/A

N/A

C. SOURCE

C. CONTRACT/GRANT NUMBER

B. FOR INFORMATION CONTACT:

NMFS

N/A

Dr. Arthur S. Merrill

D. MAN YEARS

17 A. COOPERATIVE RESOURCES

17 B. SOURCE

1.5

N/A

N/A

18. SPECIES

19. LIFE STAGE(S)

Multispecies: larval fish

Egg, larval and juvenile

20. WORK LOCATION

21. PERCENT RECREATIONAL

Middle and South Atlantic Bight

40%

22. KEY WORDS

Spawning grounds  
Description  
Distribution  
Abundance  
Young fishes

23. SUBTASK OBJECTIVES AND METHODOLOGY

Complete manuscript pertaining to description, seasonal distribution and relative abundance of 16 species of flatfishes and two species of Scomber. Complete manuscript pertaining to seasonal distribution and relative abundance of bluefish. Complete manuscript describing early stages of searobins and two sympatric species of *Merluccius*. Complete manuscript on description and occurrence of early stages of 19 species of ophichthid eels. Work actively on manuscripts describing seasonal distribution of cod, haddock and pollack, members of the families Scombridae, Sciaenidae and Clupeidae; and young stages of tilefish.

24. OFFICIAL PREPARING REPORT (Signature)

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)

*Arthur S. Merrill*

*Carl S. Ferma*



FY 75

## NMFS SUBTASK PLAN

(See Detailed Instructions)

October 1974

(Submit four copies.)

TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235FMC'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.  
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3. TDP NUMBER MAC-055-75-IE-R-1		4. SUB-OBJECTIVE CODE IV-A-9		5. PRIOR DATE N/A	
6. TASK NUMBER 871217		7. ORGANIZATION CODE FB6100		8. FACILITY Sandy Hook Laboratory 161	
9. PRIOR TDP NO. PLUS STP SUFFIX MA-055-74-IE-R-1(01)		10. SUBTASK SUFFIX 01		11. TASK TITLE Impact of Environmental Change, New York Bight	
1. NUMBER OF STP'S 11		12. SUBTASK TITLE Seabed Oxygen Consumption, New York Bight			
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 17.7K		A. START DATE (Estimated/Firm) N/A		A. NAME Ecosystems Investigations, MACFC Sandy Hook	
B. TOTAL FUNDS N/A		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 2.1		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A	
18. SPECIES benthos		19. LIFE STAGE(S) all			
20. WORK LOCATION Apex New York Bight		21. PERCENT RECREATIONAL 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 of 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) James P. Thomas      John B. Pearce			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) Carl J. Suderomann		



**NMFS SUBTASK PLAN**

(See Detailed Instructions)

2. DATE PREPARED  
October 1974

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TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
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Washington, D.C. 20235

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3. TDP NUMBER MAC-055-75-IE-R-1		4. SUB-OBJECTIVE CODE IV-A-9		5. PRIOR DATE N/A	
6. TASK NUMBER 871217	7. ORGANIZATION CODE FB6100	8. FACILITY Sandy Hook Laboratory 161		9. PRIOR TDP NO. PLUS STP SUFFIX MA-055-74-IE-R-1(02)	
10. SUBTASK SUFFIX 02	11. TASK TITLE Impact of Environmental Change, New York Bight				
13. NUMBER OF STP'S 11	12. SUBTASK TITLE Phytoplankton and Primary Productivity, New York Bight				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 17.7K	A. START DATE (Estimated/Firm) N/A	A. NAME Ecosystems Investigations, MACFC Sandy Hook			
B. TOTAL FUNDS N/A	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 N/A			
B. SPECIES phytoplankton		19. LIFE STAGE(S) all			
E. WORK LOCATION New York Bight - Lower, Sandy Hook, Raritan Bays		21. PERCENT RECREATIONAL N/A			

2. KEY WORDS  
phtyoplankton, chlorophyll, diversity indices, primary productivity, nutrients

3. 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.

4. OFFICIAL PREPARING REPORT (Signature) James P. Thomas      John B. Pearce		25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl J. Suder</i>	
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FY. 75

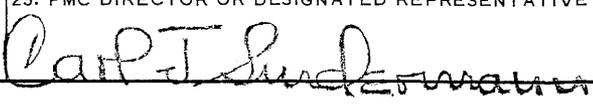
## NMFS SUBTASK PLAN

(See Detailed Instructions)

October 1974

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TO: Director, National Marine  
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National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235FMC's - Submit one or more Subtask Plans for each task funded for the coming  
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3. TDP NUMBER MAC-055-75-IE-R-1		4. SUB-OBJECTIVE CODE IV-A-9		5. PRIOR DATE N/A	
6. TASK NUMBER 871217	7. ORGANIZATION CODE FB&100	8. FACILITY Sandy Hook Laboratory 161		9. PRIOR TDP NO. PLUS STP SUFFIX MA-055-74-IE-R-1(03)	
10. SUBTASK SUFFIX 03	11. TASK TITLE Impact of Environmental Change, New York Bight				
1. NUMBER OF STP'S 11	12. SUBTASK TITLE Benthic Macrofauna, New York Bight				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 8.4K	A. START DATE (Estimated/Firm) N/A	A. NAME Ecosystems Investigations, MACFC Sandy Hook			
B. TOTAL FUNDS N/A	B. END DATE N/A				
C. SOURCE NOAA-MESA	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. John B. Pearce			
D. MAN YEARS 1	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A			
18. SPECIES benthic macrofauna		19. LIFE STAGE(S) all			
20. WORK LOCATION New York Bight Apex		21. PERCENT RECREATIONAL N/A			
2. KEY WORDS benthic macrofauna, distribution, biomass, diversity					
3. SUBTASK OBJECTIVES AND METHODOLOGY To continue a baseline survey of the benthic macrofauna in the New York Bight and determine the effect of marine contaminants on the distribution, species diversity, and biomass of these organisms with regard to demersal fisheries. The Smith-McIntyre bottom grab will be used to collect five replicate samples per station.					
4. OFFICIAL PREPARING REPORT (Signature) James P. Thomas			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) John B. Pearce 		

**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

MAC-055-75-IE-R-1(03)

NUMBER	A OR E	NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 1975												Fiscal Year 1976					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
			1	E	Baseline survey cruise - Apex.		X													
2	A	Sorting, identification and enumeration.	X																	X
3	E	(M) Report on sample design.						X												
4	E	Baseline survey cruise - Bight.															X			

**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 EACH ACTIVITY OR EVENT.

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

FY 75

October 1974

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

(Submit four copies.)

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National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235

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3. TDP NUMBER MAC-055-75-IE-R-1	4. SUB-OBJECTIVE CODE IV-A-9	5. PRIOR DATE N/A
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6. TASK NUMBER 871217	7. ORGANIZATION CODE FB6100	8. FACILITY Sandy Hook Laboratory 161	9. PRIOR TDP NO. PLUS STP SUFFIX MA-055-74-IE-R-1(04)
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10. SUBTASK SUFFIX 04	11. TASK TITLE Impact of Environmental Change, New York Bight
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1. NUMBER OF STP'S 11	12. SUBTASK TITLE Benthic Macrofauna - Sorting and Reporting
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14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
---------------	--------------------------	-----------------------------

A. DIRECT FUNDS 16.1K	A. START DATE (Estimated/Firm) 1 July 1974	A. NAME Trenton State College Office of Cooperative Studies
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B. TOTAL FUNDS N/A	B. END DATE 30 June 1975	
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C. SOURCE NOAA-MESA	C. CONTRACT/GRANT NUMBER 03-4-043-346	B. FOR INFORMATION CONTACT: Dr. John B. Pearce, Director Ecosystems Investigations, Sandy Hook
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D. MAN YEARS N/A	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A
---------------------	------------------------------------	---------------------

8. SPECIES benthic macrofauna	19. LIFE STAGE(S) all
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10. WORK LOCATION Apex of New York Bight	21. PERCENT RECREATIONAL N/A
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2. KEY WORDS  
benthic macrofauna, sorting, invertebrate identification

3. SUBTASK OBJECTIVES AND METHODOLOGY  
To accurately sort, identify, count, record and report data on benthic macrofaunal samples collected in the Apex of the New York Bight. To varify data for computer analysis.

4. OFFICIAL PREPARING REPORT (Signature) James P. Thomas	John B. Pearce	5. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) Carl J. Suderomann
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**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

MAC-055-75-IE-R-1(04)

NUMBER EACH ACTIVITY OR 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.

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

NUMBER	A OR E	NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 19 <u>75</u>												Fiscal Year 19 <u>76</u>					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
			1	A	Log and care for baseline survey samples.	X														
2	A	Sort, identify, and count baseline survey samples.	X																	
3	A	Verify data.	X																	
4	E	Provide data for MACFC-MESA annual report.												X						
5	E	Provide data for second MESA technical report on ocean dumping.														X				
6	E	Provide data for MESA annual report.																X		

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

2. DATE PREPARED

October 1974

(Submit four copies.)

TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235

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3. TDP NUMBER MAC-055-75-IE-R-1		4. SUB-OBJECTIVE CODE IV-A-9	5. PRIOR DATE N/A
------------------------------------	--	---------------------------------	----------------------

6. TASK NUMBER 05	7. ORGANIZATION CODE FB4100	8. FACILITY Sandy Hook Laboratory 161	9. PRIOR TDP NO. PLUS STP SUFFIX MA-05574-IE-R-1(05)
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10. SUBTASK SUFFIX 05	11. TASK TITLE Impact of Environmental Change, New York Bight Bight		
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1. NUMBER OF STP'S 11	12. SUBTASK TITLE Benthic Macrofauna - Sorting and Reporting		
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14. RESOURCES		15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
---------------	--	--------------------------	-----------------------------

1. DIRECT FUNDS 7.9K	A. START DATE (Estimated/Firm) 1 July 1974	A. NAME Monmouth College Office of Cooperative Studies and Finance	
-------------------------	---	---	--

3. TOTAL FUNDS N/A	B. END DATE 30 June 1975
-----------------------	-----------------------------

C. SOURCE NMFS	C. CONTRACT/GRANT NUMBER 03-4-043-347	B. FOR INFORMATION CONTACT: Dr. John B. Pearce, Ecosystems Investi- gations, MACFC, Sandy Hook	
-------------------	--	--	--

D. MAN YEARS N/A	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A	
---------------------	------------------------------------	---------------------	--

18. SPECIES benthic macrofauna		19. LIFE STAGE(S) all	
-----------------------------------	--	--------------------------	--

20. WORK LOCATION Apex of New York Bight		21. PERCENT RECREATIONAL N/A	
---	--	---------------------------------	--

22. KEY WORDS  
benthic macrofauna, sorting, invertebrate identification

23. SUBTASK OBJECTIVES AND METHODOLOGY  
To accurately sort, identify, count, record and report data on benthic macrofaunal samples collected in the Apex of the New York Bight. To varify data for computer analysis.

24. OFFICIAL PREPARING REPORT (Signature) James P. Thomas      John B. Pearce	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl J. Suderhann</i>
--	---

**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

MAC-055-75-IE-R-1(05)

NUMBER EACH ACTIVITY OR 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 <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 19 <sup>75</sup>												Fiscal Year 19 <sup>76</sup>					
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
			1	A	Log and care for baseline survey samples.	X														
2	A	Sort, identify, and count baseline survey samples.	X																	
3	A	Verify data.	X																	
4	E	Provide data for MACFC-MESA annual report.											X							
5	E	Provide data for second MESA technical report on ocean dumping.														X				
6	E	Provide data for MESA annual report.																X		

FY 75

October 1974

## NMFS SUBTASK PLAN

(See Detailed Instructions)

(Submit four copies.)

TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235FMC'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.  
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3. TDP NUMBER MAC-055-75-IE-R-1		4. SUB-OBJECTIVE CODE IV-A-9		5. PRIOR DATE N/A	
6. TASK NUMBER 871217	7. ORGANIZATION CODE FB6100	8. FACILITY Sandy Hook Laboratory 161		9. PRIOR TDP NO. PLUS STP SUFFIX MA-055-74-IE-R-1(06)	
0. SUBTASK SUFFIX 06	11. TASK TITLE Impact of Environmental Change, New York Bight				
1. NUMBER OF STP'S 11	12. SUBTASK TITLE Statistical Design and Analysis - New York Bight				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS No FY 75 funds	A. START DATE (Estimated/Firm) 6/15/73	A. NAME University of Rhode Island Dr. Saul B. Sailer			
B. TOTAL FUNDS N/A	B. END DATE 12/15/74				
C. SOURCE NOAA-MESA	C. CONTRACT/GRANT NUMBER 03-3-043-53	B. FOR INFORMATION CONTACT: Dr. John B. Pearce			
D. MAN YEARS N/A	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A			
8. SPECIES benthic fauna		19. LIFE STAGE(S) all			
10. WORK LOCATION Apex New York Bight		21. PERCENT RECREATIONAL N/A			
2. KEY WORDS Statistical analysis of benthic data, multivariate analyses, sampling design					
3. SUBTASK OBJECTIVES AND METHODOLOGY  To develop guidelines for economical and efficient sampling strategies designed to answer specific questions concerning the sampling of benthic invertebrates in the apex of the New York Bight. To develop, test, and adapt computerized programs for multi-variate analyses. To detect and identify key indicator organisms.					
4. OFFICIAL PREPARING REPORT (Signature) James P. Thomas                      John B. Pearce			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl J. Sudlowman</i>		

**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

**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 EACH ACTIVITY OR EVENT.

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

NUMBER	A OR E	NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 19 <u>75</u>												Fiscal Year 19 <u>76</u>							
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6		
1	A	Relate sampling intensity to confidence limits.	X					X														
2	E	Report on 1 (above).						X														
3	A	Determine key indicator organisms.	X							X												
4	E	Report on 3 (above).								X												
5	A	Develop multivariate computer programs						X						X								
6	E	Report on 5 (above).																		X		

OAA FORM 32-15A (1-74)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION		1. FISCAL YEAR FY 75
<b>NMFS SUBTASK PLAN</b> (See Detailed Instructions)			2. DATE PREPARED October 1974	
(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-055-75-IE-R-1		4. SUB-OBJECTIVE CODE IV-A-9		5. PRIOR DATE N/A
6. TASK NUMBER 871217	7. ORGANIZATION CODE FB6100	8. FACILITY Sandy Hook Laboratory 161		9. PRIOR TDP NO. PLUS STP SUFFIX MA-055-74-IE-R-1(07)
10. SUBTASK SUFFIX 07	11. TASK TITLE Impact of Environmental Change, New York Bight			
13. NUMBER OF STP'S 11	12. SUBTASK TITLE Benthic Meiofauna - Foraminifera - New York Bight			
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION
A. DIRECT FUNDS 11.6		A. START DATE (Estimated/Firm) 11/27/73		A. NAME City College of New York Dr. John Lee
B. TOTAL FUNDS N/A		B. END DATE 12/30/74		
C. SOURCE NOAA-MESA		C. CONTRACT/GRANT NUMBER 03-4-043-315		B. FOR INFORMATION CONTACT: Dr. John B. Pearce, Ecosystems Investigations, MACFC, Sandy Hook
D. MAN YEARS N/A		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A
18. SPECIES foraminifera			19. LIFE STAGE(S) all	
20. WORK LOCATION Apex of New York Bight			21. PERCENT RECREATIONAL N/A	
22. KEY WORDS meiofauna, foraminifera, geology, indicator organisms				
23. SUBTASK OBJECTIVES AND METHODOLOGY  To survey the present distribution patterns of living planktonic and benthic foraminifera in the New York Bight Apex; survey the extent of foraminiferan distribution in the very recent past (< 100 yrs.); and to correlate present distribution patterns with environmental data. Standard methodology as presented in Smithsonian Manual for Study of Meiofauna.				
24. OFFICIAL PREPARING REPORT (Signature)  James P. Thomas                      John B. Pearce			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)  <i>Carl J. Suderhann</i>	



FY 75

October 1974

## NMFS SUBTASK PLAN

(See Detailed Instructions)

(Submit four copies.)

TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235FMC'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-055-75-IE-R-1		4. SUB-OBJECTIVE CODE IV-A-9		5. PRIOR DATE N/A	
6. TASK NUMBER 871217	7. ORGANIZATION CODE FB6100	8. FACILITY Sandy Hook Laboratory 161		9. PRIOR TDP NO. PLUS STP SUFFIX MA-055-74-IE-R-1(08)	
0. SUBTASK SUFFIX 08	11. TASK TITLE Impact of Environmental Change, New York Bight				
1. NUMBER OF STP'S 11	12. SUBTASK TITLE Benthic Meiofauna - Nematodes - New York Bight				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS No FY 75 funds	A. START DATE (Estimated/Firm) 9/10/73	A. NAME City College of New York Dr. John Tietjen			
B. TOTAL FUNDS N/A	B. END DATE 8/31/74				
C. SOURCE NOAA-MESA	C. CONTRACT/GRANT NUMBER 03-4-043-35	B. FOR INFORMATION CONTACT: Dr. John B. Pearce, Ecosystems Investigations, MACFC, Sandy Hook			
D. MAN YEARS N/A	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A			
18. SPECIES nematodes		19. LIFE STAGE(S) adult			
20. WORK LOCATION Apex New York Bight		21. PERCENT RECREATIONAL N/A			
22. KEY WORDS meiofauna, nematodes, harpacticoid copepods, indicators species					
23. SUBTASK OBJECTIVES AND METHODOLOGY Investigate the distribution, population densities, biomass, and ecology of sublittoral nematodes in the apex of the New York Bight. Spatial distribution of nematodes and sediments will be examined and relationships defined. The role of nematodes in the New York Bight benthic ecosystems, especially in the food web, will be evaluated and effects of various contaminants assessed. Use standard methods given in Smithsonian Meiofauna Handbook.					
24. OFFICIAL PREPARING REPORT (Signature) James P. Thomas      John B. Pearce			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) C. J. Sudekman		

**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

MAC-055-75-IE-R-1(08)

—NUMBER EACH ACTIVITY OR 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.

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

A O R E	NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 19 <u>75</u>												Fiscal Year 19 <u>76</u>							
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6		
		A	Complete identifying and enumerating.	X	—————									X							
A	Relate distribution to contaminants.										X	X									
E	Report results.											X									

FY 75

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

October 1974

(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-055-75-IE-R-1

4. SUB-OBJECTIVE CODE

IV-A-9

5. PRIOR DATE

N/A

6. TASK NUMBER

871217

7. ORGANIZATION CODE

FB0100

8. FACILITY

Sandy Hook Laboratory 161

9. PRIOR TDP NO. PLUS STP SUFFIX

MA-05574-IE-R-1(09)

10. SUBTASK SUFFIX

09

11. TASK TITLE

Impact of Environmental Change, New York Bight

13. NUMBER OF STP'S

11

12. SUBTASK TITLE

Benthic Meiofauna - Ciliates - New York Bight

14. RESOURCES

15. CONTRACT/GRANT INFO.

16. PERFORMING ORGANIZATION

A. DIRECT FUNDS

12.4K

A. START DATE (Estimated/Firm)

5/11/73

A. NAME

University of Maryland  
Dr. Eugene Small

B. TOTAL FUNDS

N/A

B. END DATE

1/31/75

C. SOURCE

NOAA-MESA

C. CONTRACT/GRANT NUMBER

03-3-043-48

B. FOR INFORMATION CONTACT:

Dr. John B. Pearce, Ecosystems  
Investigations, MACFC, Sandy Hook

D. MAN YEARS

N/A

17 A. COOPERATIVE RESOURCES

N/A

17 B. SOURCE

N/A

18. SPECIES

ciliate protozoa

19. LIFE STAGE(S)

all

20. WORK LOCATION

Apex New York Bight

21. PERCENT RECREATIONAL

N/A

22. KEY WORDS

meiofauna, microfauna, ciliate protozoa, ciliophora, indicator species

23. SUBTASK OBJECTIVES AND METHODOLOGY

Investigate the distribution, diversity, and population densities of ciliate protozoa in the apex of the New York Bight. Sampling gear, some newly innovated, and other gear to be constructed from published literature. Methodologies shall be field tested to ascertain which methods appear best for ship board collection.

24. OFFICIAL PREPARING REPORT (Signature)

James P. Thomas

John B. Pearce

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)

Carl J. Sundermann



FY 75

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

October 1974

(Submit four copies.)

TO: Director, National Marine Fisheries Service, ATTN: Fx5 National Oceanic and Atmospheric Administration Washington, D.C. 20235

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3. TDP NUMBER <b>MAC-055-75-IE-R-1</b>		4. SUB-OBJECTIVE CODE <b>II-D-14</b>		5. PRIOR DATE <b>N/A</b>	
6. TASK NUMBER <b>871217</b>	7. ORGANIZATION CODE <b>FB1600</b>	8. FACILITY <b>Sandy Hook Laboratory 161</b>		9. PRIOR TDP NO. PLUS STP <b>MA-055-74-IE-R-1(10)</b>	
10. SUBTASK SUFFIX <b>10</b>	11. TASK TITLE <b>Impact of Environmental Change, New York Bight</b>				
1. NUMBER OF STP'S <b>11</b>	12. SUBTASK TITLE <b>Phytoplankton and Primary Productivity - Apex New York Bight</b>				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS <b>69.6K</b>	A. START DATE (Estimated/Firm) <b>4/10/74</b>	A. NAME <b>City College of New York Dr. Thomas Malone</b>			
B. TOTAL FUNDS <b>N/A</b>	B. END DATE <b>2/28/75</b>	B. FOR INFORMATION CONTACT: <b>Dr. John B. Pearce</b>			
C. SOURCE <b>NOAA-MESA</b>	C. CONTRACT/GRANT NUMBER <b>03-4-043-310</b>	17 B. SOURCE <b>N/A</b>			
D. MAN YEARS <b>N/A</b>	17 A. COOPERATIVE RESOURCES <b>N/A</b>	19. LIFE STAGE(S) <b>all</b>			
8. SPECIES <b>phytoplankton</b>	21. PERCENT RECREATIONAL <b>N/A</b>				
10. WORK LOCATION <b>Apex New York Bight</b>					

2. KEY WORDS  
**phytoplankton, chlorophyll, diversity indices, primary productivity, nutrients**

3. 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 the Apex of the New York Bight, Lower Bay, and Lower Hudson River; use standard methods as Strickland, Riley and others.**

4. OFFICIAL PREPARING REPORT (Signature) <b>James P. Thomas      John B. Pearce</b>		25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <b>Carl J. Suder</b>	
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1975

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

10/25/74

(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 <b>MAC-055-75-IE-R-1</b>		4. SUB-OBJECTIVE CODE <b>IV-A-3</b>		5. PRIOR DATE <b>New STP</b>	
TASK NUMBER <b>871217</b>	7. ORGANIZATION CODE <b>FB6200</b>	8. FACILITY <b>MACFC - 162</b>		9. PRIOR TDP NO. PLUS STP SUFFIX <b>MA55-74 ( 11)</b>	
10. SUBTASK SUFFIX <b>11</b>	11. TASK TITLE <b>MESA - New York Bight - Biological Oceanography</b>				
13. NUMBER OF STP'S <b>11</b>	12. SUBTASK TITLE <b>Analysis of Groundfish Samples for MESA Objectives</b>				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
DIRECT FUNDS <b>12.8K</b>	A. START DATE (Estimated/Firm) <b>N/A</b>	A. NAME <b>Resource Assessment Investigations</b>			
TOTAL FUNDS <b>N/A</b>	B. END DATE <b>N/A</b>				
SOURCE <b>MESA</b>	C. CONTRACT/GRANT NUMBER <b>N/A</b>	B. FOR INFORMATION CONTACT: <b>Dr. Arthur S. Merrill</b>			
MAN YEARS <b>1.5</b>	17 A. COOPERATIVE RESOURCES <b>N/A</b>	17 B. SOURCE <b>N/A</b>			
18. SPECIES <b>Multispecies</b>		19. LIFE STAGE(S) <b>Juvenile - Adult</b>			
20. WORK LOCATION <b>New York Bight</b>		21. PERCENT RECREATIONAL <b>50%</b>			
23. KEY WORDS <b>MESA Groundfish Disease incidence</b> <b>Species composition Relative abundance</b>					
24. SUBTASK OBJECTIVES AND METHODOLOGY Provide a platform for observing, collecting and preparing pathological groundfish and invertebrate specimens for laboratory analysis. Analyze samples from all groundfish cruises and determine difference in composition and relative abundance of species taken in MESA impact areas and contiguous areas of the New York Bight. Provide summary semi-annual and annual reports to MESA.					
22. OFFICIAL PREPARING REPORT (Signature) <i>Arthur S Merrill</i>			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl Sudnow</i>		

**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

MAC-055-75-IE-R-1(11)

NUMBER EACH ACTIVITY OR 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.

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

NUMBER	A O R E	NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 1975												Fiscal Year 1976									
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6				
1	A	Collect and distribute pathological samples.	X	-----											X									
2	A	Analyze groundfish samples for MESA-related objectives.	X	-----											X	→								
3	A	Prepare semi-annual report to MESA.							X	X										X	→			
4	A	Complete annual report to MESA.											X	X										

1975

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

10/24/74

(Submit four copies.)

TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235

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3. TDP NUMBER

MAC-056-75-AQ-A

4. SUB-OBJECTIVE CODE

II-A-3

5. PRIOR DATE

New

6. TASK NUMBER

7. ORGANIZATION CODE

FB6300

8. FACILITY

Milford Laboratory-163

9. PRIOR TDP NO. PLUS STP SUFFIX

MAC-014-75-IE-A  
(-)

10. SUBTASK SUFFIX

01

11. TASK TITLE

Aquacultural Genetics

12. NUMBER OF STP'S

1

13. SUBTASK TITLE

Genetics of Commercial and Related Species

14. RESOURCES

15. CONTRACT/GRANT INFO.

16. PERFORMING ORGANIZATION

A. DIRECT FUNDS

23.1

A. START DATE (Estimated/Firm)

N/A

A. NAME

Experimental Biology Investigations

B. TOTAL FUNDS

N/A

B. END DATE

N/A

C. SOURCE

National Marine Fisheries  
Service

C. CONTRACT/GRANT NUMBER

N/A

B. FOR INFORMATION CONTACT:

Dr. Arlene Longwell

D. MAN YEARS

1.2

17 A. COOPERATIVE RESOURCES

N/A

17 B. SOURCE

N/A

18. SPECIES

commercial American oyster and related oysters

19. LIFE STAGE(S)

egg through adult over several generations

20. WORK LOCATION

laboratory

21. PERCENT RECREATIONAL

0%

22. KEY WORDS

inbreds, hybrids, mass selection, artificial sea water, artificial diets, parthenogenesis, gamete preservation, genetic damage, pollutants, cooperative planning, symposium, review

23. SUBTASK OBJECTIVES AND METHODOLOGY

Elucidate those aspects of the genetics of the commercial oysters, the knowledge of which properly used in appropriately funded government or private breeding programs should lead to superior hatchery strains industry desires.

24. OFFICIAL PREPARING REPORT (Signature)

*A. Longwell*  
Investigation Chief  
*James E. Hart*  
Director of Investigations

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature)

*Carl J. Suderbaum*





1975

NMFS SUBTASK PLAN

(See Detailed Instructions)

10/24/74

(Submit four copies.)

TO: Director, National Marine Fisheries Service, ATTN: Fx5 National Oceanic and Atmospheric Administration Washington, D.C. 20235

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3. TDP NUMBER MAC-057-75-AQ-A1	4. SUB-OBJECTIVE CODE III-A-3	5. PRIOR DATE New
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6. TASK NUMBER	7. ORGANIZATION CODE FB6300	8. FACILITY Milford Laboratory-163	9. PRIOR TDP NO. PLUS STP SUFFIX MAC-013-75-IE-A
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10. SUBTASK SUFFIX 01	11. TASK TITLE Aspects of Nutritional Requirements of Mollusks
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12. NUMBER OF STP'S 4	13. SUBTASK TITLE Laboratory Culture of Marine Micro-algae
--------------------------	---

14. RESOURCES		15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS 3.8K	A. START DATE (Estimated/Firm) N/A	A. NAME Aquaculture Investigations	
B. TOTAL FUNDS N/A	B. END DATE N/A		
C. SOURCE National Marine Fisheries Service	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. Ravenna Ukeles	
D. MAN YEARS 0.2	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A	

18. SPECIES multi-species	19. LIFE STAGE(S) all
------------------------------	--------------------------

20. WORK LOCATION laboratory	21. PERCENT RECREATIONAL N/A
---------------------------------	---------------------------------

22. KEY WORDS  
microscopic algae, culture collection, marine media, laboratory culture, vitamins, trace metals, pH

23. SUBTASK OBJECTIVES AND METHODOLOGY  
The objectives of this Subtask are to maintain a marine microscopic algal collection to serve as a source for experimental work and to investigate various factors significant to laboratory culture of these species. Variables will be examined for effects on total population, growth rate and cell components.

24. OFFICIAL PREPARING REPORT (Signature) <i>Ravenna Ukeles</i> Investigation Chief Director of Investigations	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl J. Suderoman</i>
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NOAA FORM 32-15A (4-74)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION		1. FISCAL YEAR 1975
<b>NMFS SUBTASK PLAN</b> (See Detailed Instructions)			2. DATE PREPARED 10/24/74	
(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 ( <i>Sandy Hook and Oxford, for example</i> ) 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-057-75-AQ-A-1		4. SUB-OBJECTIVE CODE III-A-3		5. PRIOR DATE New
6. TASK NUMBER	7. ORGANIZATION CODE FB6300	8. FACILITY Milford Laboratory-163		9. PRIOR TDP NO. PLUS STP SUFFIX MAC-013-75-IE-A-1
10. SUBTASK SUFFIX 02	11. TASK TITLE Aspects of Nutritional Requirements of Mollusks			
12. NUMBER OF STP'S 4	13. SUBTASK TITLE Mass Cultivation of Marine Micro-algae			
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION
A. DIRECT FUNDS 10.9		A. START DATE (Estimated/Firm) N/A		A. NAME Aquaculture Investigations
B. TOTAL FUNDS N/A		B. END DATE N/A		
C. SOURCE National Marine Fisheries Service		C. CONTRACT/GRANT NUMBER N/A		B. FOR INFORMATION CONTACT: Dr. Ravenna Ukeles
D. MAN YEARS 0.3		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A
18. SPECIES multi-species			19. LIFE STAGE(S) all	
20. WORK LOCATION laboratory			21. PERCENT RECREATIONAL N/A	
22. KEY WORDS mass culture, food production, harvest, productivity, cost				
23. SUBTASK OBJECTIVES AND METHODOLOGY The objective of this Subtask is to develop some improvements in the present method of mass culture and utilize this food source in the most economical manner possible. The method will be to utilize existing procedures in mass culture including present inovations and evaluate yield relative to cost inputs.				
24. OFFICIAL PREPARING REPORT (Signature) <i>Jana E. Ukeles</i> Investigation Chief Director of Investigations			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl J. Sundermann</i>	



NOAA FORM 32-15A (4-74)		U. S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION		1. FISCAL YEAR 1975	
<b>NMFS SUBTASK PLAN</b> (See Detailed Instructions)				2. DATE PREPARED 10/24/74	
(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-057-75-AQ-A-1		4. SUB-OBJECTIVE CODE III-A-3		5. PRIOR DATE New	
6. TASK NUMBER	7. ORGANIZATION CODE FB6300	8. FACILITY Milford Laboratory-163		9. PRIOR TDP NO. PLUS STP SUFFIX MAC- 013-75-IE-A-1	
10. SUBTASK SUFFIX 03	11. TASK TITLE Aspects of Nutritional Requirements of Mollusks				
12. NUMBER OF STP'S 4	13. SUBTASK TITLE Experiments in Molluscan Nutrition				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 10.9	A. START DATE (Estimated/Firm) N/A	A. NAME Aquaculture Investigations			
B. TOTAL FUNDS N/A	B. END DATE N/A				
C. SOURCE National Marine Fisheries Service	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. Ravenna Ukeles			
D. MAN YEARS 0.3	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A			
18. SPECIES multi-species		19. LIFE STAGE(S) all			
20. WORK LOCATION laboratory		21. PERCENT RECREATIONAL N/A			
22. KEY WORDS veliger larvae, nutritional requirements, viable foods					
23. SUBTASK OBJECTIVES AND METHODOLOGY The primary objective during this period will be to develop appropriate systems for the critical study of oyster veliger nutritional requirements. Methodology will include a study of chemical and morphological changes in larvae during various feeding systems.					
24. OFFICIAL PREPARING REPORT (Signature) James E. Smith Investigation Chief Director of Investigations			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) Carl J. Suderwan		



**NMFS SUBTASK PLAN**  
(See Detailed Instructions)

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

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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 <b>MAC-057-75-AQ-A-1</b>	4. SUB-OBJECTIVE CODE <b>III-A-3</b>	5. PRIOR DATE <b>New</b>
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6. TASK NUMBER	7. ORGANIZATION CODE <b>FB6300</b>	8. FACILITY <b>Milford Laboratory-163</b>	9. PRIOR TDP NO. PLUS STP SUFFIX <b>MAC-057-75-AQ-A-1</b>
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10. SUBTASK SUFFIX <b>04</b>	11. TASK TITLE <b>Aspects of Nutritional Requirements of Mollusks</b>
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12. NUMBER OF STP'S <b>4</b>	13. SUBTASK TITLE <b>Effect of Pollutants on Cultivation of Micro-algae</b>
---------------------------------	--

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
A. DIRECT FUNDS <b>3.8K</b>	A. START DATE (Estimated/Firm) <b>N/A</b>	A. NAME <b>Aquaculture Investigations</b>
B. TOTAL FUNDS <b>N/A</b>	B. END DATE <b>N/A</b>	
C. SOURCE <b>National Marine Fisheries Service</b>	C. CONTRACT/GRANT NUMBER <b>N/A</b>	B. FOR INFORMATION CONTACT: <b>Dr. Ravenna Ukeles</b>
D. MAN YEARS <b>0.2</b>	17 A. COOPERATIVE RESOURCES <b>N/A</b>	17 B. SOURCE <b>N/A</b>

18. SPECIES <b>multi-species</b>	19. LIFE STAGE(S)
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20. WORK LOCATION <b>laboratory</b>	21. PERCENT RECREATIONAL <b>N/A</b>
--	--

22. KEY WORDS  
**pollutants, toxicants, laboratory culture, phytoplankton, salinity, selenium, cadmium**

23. SUBTASK OBJECTIVES AND METHODOLOGY  
  
The objective of this Subtask is to determine the potential effects of pollutants in the marine environment on efforts to cultivate micro-algae as food source. Methodology will include the examination of organic and inorganic contaminants on algal productivity.

24. OFFICIAL PREPARING REPORT (Signature)  
*James E. Hanley*  
Investigation Chief  
Director of Investigations

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



NM 32-15A NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION		U. S. DEPARTMENT OF COMMERCE		1. FISCAL YEAR 1975
<b>NMFS SUBTASK PLAN</b> (See Detailed Instructions)			2. DATE PREPARED 10/24/74	
(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-059-75-AQ-A-1		4. SUB-OBJECTIVE CODE III-A-3		5. PRIOR DATE New
6. TASK NUMBER	7. ORGANIZATION CODE FB6300	8. FACILITY Milford Laboratory, MACFC-163		9. PRIOR TDP NO. PLUS STP SUFFIX MAC-012-75-IE-A-1
10. SUBTASK SUFFIX 01	11. TASK TITLE Spawning and Rearing of Molluscs			
12. NUMBER OF STP'S 2	13. SUBTASK TITLE Culture Methods for the Bay Scallop			
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION
A. DIRECT FUNDS 26.6K		A. START DATE (Estimated/Firm) N/A		A. NAME Aquaculture Investigations
B. TOTAL FUNDS N/A		B. END DATE N/A		
C. SOURCE National Marine Fisheries Service		C. CONTRACT/GRANT NUMBER N/A		B. FOR INFORMATION CONTACT: Mr. Warren S. Landers
D. MAN YEARS 1.6		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A
18. SPECIES bay scallop				19. LIFE STAGE(S) all
20. WORK LOCATION laboratory				21. PERCENT RECREATIONAL 0%
22. KEY WORDS culture, bay scallop				
23. SUBTASK OBJECTIVES AND METHODOLOGY Refine existing methods for ripening and spawning adult bay scallops and for rearing the larvae on a commercial basis. Develop economically-feasible methods for growing post-set bay scallops to market size. Molluscan culture techniques developed at Milford Laboratory in the past will form the methodological basis for this Subtask.				
24. OFFICIAL PREPARING REPORT (Signature) <i>Warren S. Landers</i> Warren S. Landers Investigation Chief Director of Investigations			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>J. Holston</i> Carl J. Sindermann CENTER DIRECTOR	



1975

10/24/74

**NMFS SUBTASK PLAN**

(See Detailed Instructions)

(Submit four copies.)

TO: Director, National Marine Fisheries Service, ATTN: Fx5 National Oceanic and Atmospheric Administration Washington, D.C. 20235

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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-059-75-AQ-A-1	4. SUB-OBJECTIVE CODE III-A-3	5. PRIOR DATE New
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6. TASK NUMBER	7. ORGANIZATION CODE FB6300	8. FACILITY Milford Laboratory, MACFC-163	9. PRIOR TDP NO. PLUS STP SUFFIX MAC-012-75-IE-A-1
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10. SUBTASK SUFFIX 02	11. TASK TITLE Spawning and Rearing of Molluscs
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12. NUMBER OF STP'S 2	13. SUBTASK TITLE Culture Methods for the Surf Clam
--------------------------	--

14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
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A. DIRECT FUNDS 26.0K	A. START DATE (Estimated/Firm) N/A	A. NAME Aquaculture Investigations
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B. TOTAL FUNDS N/A	B. END DATE N/A	
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C. SOURCE National Marine Fisheries Service	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Mr. Warren S. Landers
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D. MAN YEARS 1.6	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A
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18. SPECIES surf clam	19. LIFE STAGE(S) all
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20. WORK LOCATION laboratory	21. PERCENT RECREATIONAL 0%
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22. KEY WORDS culture, surf clam
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23. SUBTASK OBJECTIVES AND METHODOLOGY Refine existing methods for ripening and spawning adult surf clam and for rearing the larvae on a commercial basis. Develop economically-feasible method for growing post-set surf clams to the smallest, commercially-valuable size. Molluscan culture techniques developed at Milford Laboratory in the past will form the basic methodological approach for this Subtask.
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24. OFFICIAL PREPARING REPORT (Signature) <i>Warren S. Landers</i> Investigation Chief <i>James G. Jankin</i> Director of Investigations
--

25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>J. Holsten</i> Carl J. Sindermann CENTER DIRECTOR
---



U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION		1. FISCAL YEAR FY 75
<b>NMFS SUBTASK PLAN</b> (See Detailed Instructions)		2. DATE PREPARED October 1974
(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 ( <i>Sandy Hook and Oxford, for example</i> ) 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-061-75-IE-R-1		4. SUB-OBJECTIVE CODE IV-A-9
5. PRIOR DATE N/A		6. TASK NUMBER R81701
7. ORGANIZATION CODE FB6100	8. FACILITY Sandy Hook Laboratory 161	9. PRIOR TDP NO. PLUS STP SUFFIX N/A
10. SUBTASK SUFFIX 01	11. TASK TITLE The Effect of Temperature Change on Schooling and Feeding Behavior of Juvenile Mullet and Bluefish - AEC Reimbursable	
13. NUMBER OF STP'S 1	12. SUBTASK TITLE	
14. RESOURCES		15. CONTRACT/GRANT INFO.
16. PERFORMING ORGANIZATION		
17. DIRECT FUNDS 28.1	A. START DATE (Estimated/Firm) N/A	A. NAME Ecosystems Investigations
18. TOTAL FUNDS N/A	B. END DATE N/A	
19. SOURCE AEC-DB&M	C. CONTRACT/GRANT NUMBER N/A	B. FOR INFORMATION CONTACT: Dr. John B. Pearce
20. MAN YEARS 0.8	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A
21. SPECIES <u>Pomatomus saltatrix</u> <u>Mugil cephalus</u>		19. LIFE STAGE(S) juveniles
22. WORK LOCATION Sandy Hook Laboratory		21. PERCENT RECREATIONAL 50% of species are recreational
23. KEY WORDS Schooling, olfaction, thermal stress, feeding, vision		
24. SUBTASK OBJECTIVES AND METHODOLOGY Use of previously established methodology for testing responsiveness and feeding of juvenile mullet under normal conditions to establish similar response levels for juvenile bluefish. Use of these baseline criteria to measure stress responses in both species.		
25. OFFICIAL PREPARING REPORT (Signature) John B. Pearce		26. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) Carl J. Suderomann
27. NAME John B. Pearce		



FY 75

## NMFS SUBTASK PLAN

(See Detailed Instructions)

October 1974

(Submit four copies.)

TO: Director, National Marine  
Fisheries Service, ATTN: Fx5  
National Oceanic and  
Atmospheric Administration  
Washington, D.C. 20235FMC'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.  
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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-067-75-IE-A		4. SUB-OBJECTIVE CODE IV-A-2		5. PRIOR DATE N/A	
6. TASK NUMBER 8818Q1	7. ORGANIZATION CODE FB6100	8. FACILITY Sandy Hook Laboratory 161		9. PRIOR TDP NO. PLUS STP SUFFIX New	
10. SUBTASK SUFFIX 01	11. TASK TITLE Primary Productivity and its Relationships to Pollution and Coastal Fisheries				
1. NUMBER OF STP'S 1	12. SUBTASK TITLE Phytoplankton and Primary Productivity, New York Bight				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 76.6K	A. START DATE (Estimated/Firm) N/A	A. NAME Ecosystems Investigations			
B. TOTAL FUNDS N/A	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 4.7	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A			
8. SPECIES phytoplankton		19. LIFE STAGE(S) all			
10. WORK LOCATION New York Bight - Lower, Sandy Hook, Raritan Bays		21. PERCENT RECREATIONAL N/A			
2. KEY WORDS phytoplankton, chlorophyll, diversity indices, primary productivity, nutrients					
3. SUBTASK OBJECTIVES AND METHODOLOGY Investigate and map the seasonal variations in the distribution and magnitude of primary produc- tivity, changes in species composition, and biomass in Raritan, Sandy Hook, and Lower Bays, adjacent to the apex of the New York Bight. These data will be compared with the distributions and magnitudes of toxic materials, nutrients, etc. and examined for their potential effects on fisheries.					
4. OFFICIAL PREPARING REPORT (Signature) James P. Thomas      John B. Pearce		23. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) Carl J. Sundermann			



1975

10/25/74

**NMFS SUBTASK PLAN**

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National Oceanic and  
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3. TDP NUMBER MAC-068-75-LS-R		4. SUB-OBJECTIVE CODE IV-A-3		5. PRIOR DATE New STP	
6. TASK NUMBER B81703	7. ORGANIZATION CODE FB6200	8. FACILITY MACFC - 162		9. PRIOR TDP NO. PLUS STP SUFFIX -- (01)	
10. SUBTASK SUFFIX 01	11. TASK TITLE Historical Hydrographic Data				
13. NUMBER OF STP'S 1	12. SUBTASK TITLE Historical Hydrographic Data				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
A. DIRECT FUNDS 14.4		A. START DATE (Estimated/Firm) 1 May 1974		A. NAME Resource Assessment Investigations	
B. TOTAL FUNDS N/A		B. END DATE 21 May 1975			
C. SOURCE AEC-BNL		C. CONTRACT/GRANT NUMBER N/A		B. FOR INFORMATION CONTACT: Dr. Arthur S. Merrill	
D. MAN YEARS 0.5		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A	
E. SPECIES N/A		19. LIFE STAGE(S) N/A			
F. WORK LOCATION Sandy Hook		21. PERCENT RECREATIONAL N/A			
22. KEY WORDS Hydrographic data, Middle Atlantic Bight					
23. SUBTASK OBJECTIVES AND METHODOLOGY Update and complete hydrographic data bank at Sandy Hook including pertinent in-house information as well as data from other NMFS sources and NODC. Information will be compiled and processed for ADP and applicable copies forwarded to BNL for their files and interpretation. Make data available to users at Sandy Hook.					
24. OFFICIAL PREPARING REPORT (Signature) <i>Arthur S. Merrill</i>			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl Luderhans</i>		



FY 75

October 1974

**NMFS SUBTASK PLAN**

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3. TDP NUMBER MAC-069-75-IE-R-1*	4. SUB-OBJECTIVE CODE IV-A-9	5. PRIOR DATE New
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6. TASK NUMBER R81801	7. ORGANIZATION CODE FB6100	8. FACILITY Sandy Hook Laboratory 161	9. PRIOR TDP NO. PLUS STP SUFFIX N/A
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10. SUBTASK SUFFIX 01	11. TASK TITLE Effects of Dredge Spoil Disposal, New London, Connecticut
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1. NUMBER OF STP'S 3	12. SUBTASK TITLE Effects on Sediments and Benthic Macrofauna
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14. RESOURCES	15. CONTRACT/GRANT INFO.	16. PERFORMING ORGANIZATION
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2. DIRECT FUNDS 82.2	A. START DATE (Estimated/Firm) 1 July 1974	A. NAME Ecosystems Investigations
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3. TOTAL FUNDS N/A	B. END DATE 30 June 1976
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C. SOURCE U. S. Navy	C. CONTRACT/GRANT NUMBER R81801	B. FOR INFORMATION CONTACT: Dr. John B. Pearce
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D. MAN YEARS 2.0	17 A. COOPERATIVE RESOURCES N/A	17 B. SOURCE N/A
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8. SPECIES Benthic Populations	19. LIFE STAGE(S) N/A
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10. WORK LOCATION Thames River Estuary, Eastern Long Island Sound	21. PERCENT RECREATIONAL 0%
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2. KEY WORDS  
Benthic macrofauna, heavy metals, dredging and spoiling, microorganisms, sublethal exposures

3. SUBTASK OBJECTIVES AND METHODOLOGY  
To understand effects of estuarine dredging and spoiling on coastal living resources and fisheries; monitor impact of dredging and spoiling in Thames River estuary and advise interagency subcommittee, Environmental Assessment Division and Regional Director, NMFS. Methodology: Seasonal benthic and water samples, lab sorting and analyses. Chemical and geological analyses. In situ exposure studies, dive surveys and sedimentation rate experiments.

\*TDP in Preparation

4. OFFICIAL PREPARING REPORT (Signature) Robert Reid	25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) Carl J. Suderomann
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**NMFS SUBTASK PLAN**  
**26. ACTIVITY SCHEDULE AND EVENTS**

MAC-069-75-IE-R-1-01

NUMBER EACH ACTIVITY OR 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.

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

NUMBER A OR E	NARRATIVE <i>(Brief descriptive phrase of activity or event)</i>	Fiscal Year 1975												Fiscal Year 1976							
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6		
		1	A	Quarterly field surveys to monitor effects of dredging and spoil disposal at New London, Conn.	X		X	X			X	X		X	X	X	X		X	X	
2	E	Quarterly reports to Interagency Scientific Advisory Subcommittee on Ocean Dredging and Spoiling, and COE, Navy.					X		X		X				X					X	

1. FISCAL YEAR  
FY 75

**NMFS SUBTASK PLAN**  
(See Detailed Instructions)

2. DATE PREPARED  
October 1974

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

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TDP NUMBER MAC-069-75-IE-R-1		4. SUB-OBJECTIVE CODE IV-A-9		5. PRIOR DATE N/A	
TASK NUMBER R81801	7. ORGANIZATION CODE FB6100	8. FACILITY Contract - 900		9. PRIOR TDP NO. PLUS STP SUFFIX N/A	
10. SUBTASK SUFFIX 02	11. TASK TITLE Effects of Dredge Spoil Disposal, New London, Connecticut				
13. NUMBER OF STP'S 3	12. SUBTASK TITLE Effects on Physical and Chemical Oceanography of Dump Site				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
DIRECT FUNDS 238.3K		A. START DATE (Estimated/Firm) 1 July 1974		A. NAME New York Ocean Science Laboratory Montauk, Long Island, New York	
TOTAL FUNDS N/A		B. END DATE 30 June 1976			
SOURCE U. S. Navy		C. CONTRACT/GRANT NUMBER 03-5-043-303, 304, 305		B. FOR INFORMATION CONTACT: Dr. John B. Pearce Sandy Hook Laboratory	
MAN YEARS N/A		17 A. COOPERATIVE RESOURCES N/A		17 B. SOURCE N/A	
18. SPECIES all indigenous species				19. LIFE STAGE(S) N/A	
20. WORK LOCATION Thames River Estuary, Long Island Sound				21. PERCENT RECREATIONAL 10%	
22. KEY WORDS Hydrography, chemical contaminants, suspended substances, dissolved substances, finfish resources					
23. SUBTASK OBJECTIVES AND METHODOLOGY Determine water movements and velocities; how sediments are moved from dredging and spoiling sites; impact of sediments on fisheries. Chemical nature of suspended sediments and impact on fisheries. Methodology: Quarterly current, water, sediment and demersal fish measurements.					
24. OFFICIAL PREPARING REPORT (Signature) Robert Reid			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) John B. Pearce		



FY 75

October 1974

**NMFS SUBTASK PLAN**

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3. TDP NUMBER <b>MAC-069-75-IE-R-1</b>		4. SUB-OBJECTIVE CODE <b>IV-A-9</b>		5. PRIOR DATE <b>N/A</b>	
6. TASK NUMBER <b>R81801</b>	7. ORGANIZATION CODE <b>FB6100</b>	8. FACILITY <b>Contract - 900</b>		9. PRIOR TDP NO. PLUS STP SUFFIX <b>N/A</b>	
10. SUBTASK SUFFIX <b>03</b>	11. TASK TITLE <b>Effects of Dredge Spoil Disposal, New London, Connecticut</b>				
13. NUMBER OF STP'S <b>3</b>	12. SUBTASK TITLE <b>Effects on Suspended Matter, Phytoplankton and Shellfish, New London, Connecticut</b>				
14. RESOURCES		15. CONTRACT/GRANT INFO.		16. PERFORMING ORGANIZATION	
14.1. DIRECT FUNDS <b>121.0K</b>		A. START DATE ( <del>ESTIMATE</del> /Firm) <b>1 July 1974</b>		A. NAME <b>Marine Science Institute University of Connecticut</b>	
14.2. TOTAL FUNDS <b>N/A</b>		B. END DATE <b>30 June 1976</b>			
14.3. SOURCE <b>U. S. Navy</b>		C. CONTRACT/GRANT NUMBER <b>03-5-043-301 and 302</b>		B. FOR INFORMATION CONTACT: <b>Dr. John B. Pearce Sandy Hook Laboratory</b>	
14.4. MAN YEARS <b>N/A</b>		17 A. COOPERATIVE RESOURCES <b>N/A</b>		17 B. SOURCE <b>N/A</b>	
18. SPECIES <b>Oyster, hard clam</b>				19. LIFE STAGE(S) <b>N/A</b>	
20. WORK LOCATION <b>Thames River and Thames River Estuary, Eastern Long Island Sound</b>				21. PERCENT RECREATIONAL <b>0%</b>	
22. KEY WORDS <b>Shellfish populations, suspended material transport, dredging, mass flux, phytoplankton</b>					
23. SUBTASK OBJECTIVES AND METHODOLOGY <b>Determine impact of dredging on intertidal and sublittoral shellfish beds; impact of dredging on phytoplankton distribution and abundance; movement of suspended materials within Thames River estuary. Monitor lobster populations in disposal area. Methodology: Quarterly shellfish monitoring, water sampling; SCUBA surveys and remote tracking of dump site lobsters.</b>					
24. OFFICIAL PREPARING REPORT (Signature) <i>Robert N. Reid</i> Robert Reid			25. FMC DIRECTOR OR DESIGNATED REPRESENTATIVE (Signature) <i>Carl J. Suderomann</i>		
John B. Pearce					

