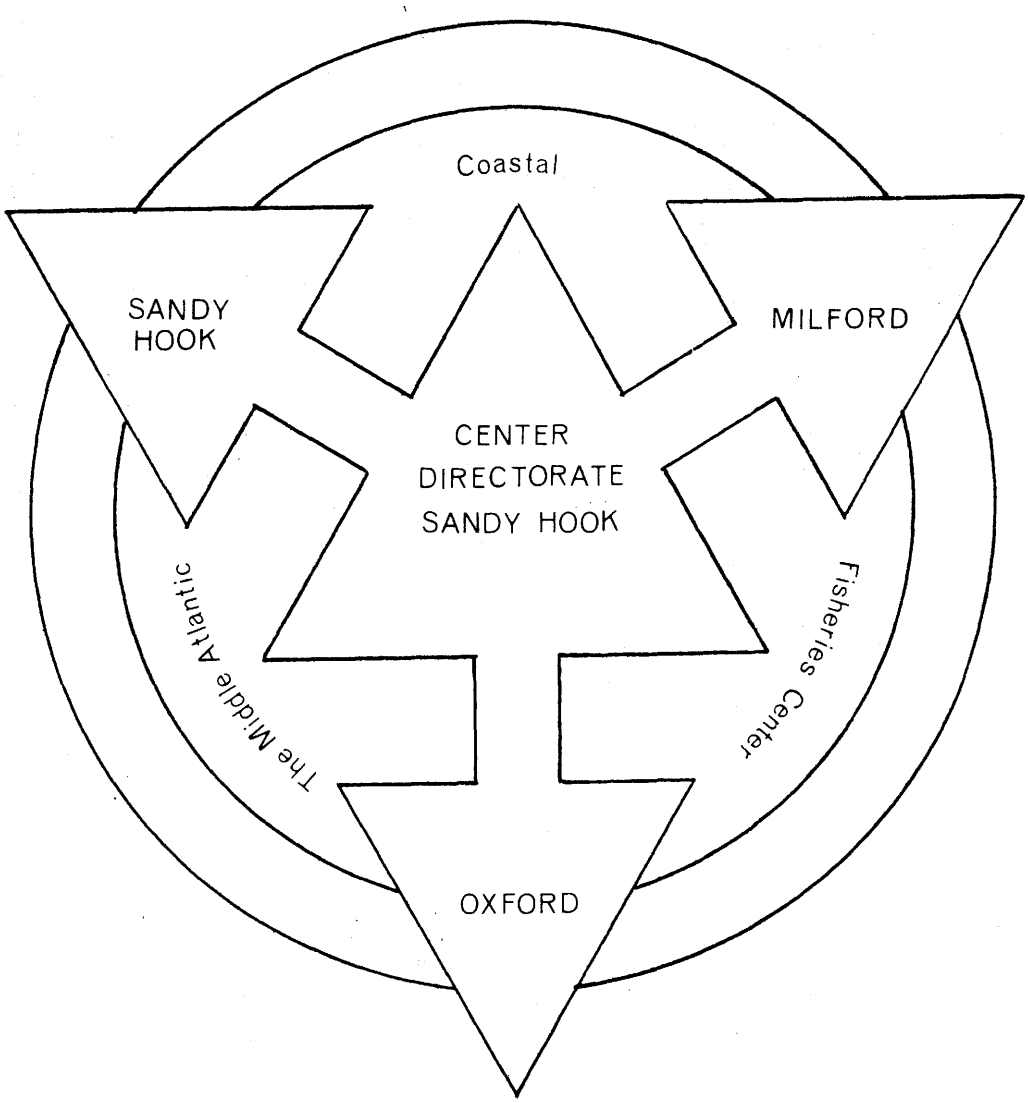
U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Northeast Region

MIDDLE ATLANTIC COASTAL FISHERIES CENTER



TASK DEVELOPMENT PLANS - FY 1974
(Submitted March 30, 1973)

Informal Report No. 14

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

Date : April 4, 1973

Reply to Attn. of: FNE1

To : F1 - Assoc. Director for Resource Research, NMFS
Attn: F18, Washington, D. C. 20235

From : Carl J. Sindermann, Center Director, MACFC Carl Sindermann

Subject: Submission of Abbreviated '74 TDP's

In response to your request received here on March 20, 1973, there are submitted herewith 23 abbreviated TDP's governing work and services proposed for the fiscal year '74 by this Center. We have not resubmitted the three construction items requested earlier specifically for inclusion in the fiscal '75 budget estimates. All submitted TDP's (4 copies each) have been altered to (1) reflect new short titles, (2) to conform with termination requests and (3) the suggested fiscal '74 target allocation.

There is also submitted a crosswalk relating each TDP (fiscal '73 and fiscal '74) to specific appropriation codes. Inasmuch as this Center was never approved for a Management Fund per se, certain administrative support and technical services costs have been prorated to the appropriation codes. The crosswalk is extended also to show program transitions between fiscal '73 and '74.

MACFC, on April 2, received notice that aquaculture operations could be proposed, contingent upon specific fiscal '74 funding developments. The TDP's submitted herewith (MA-31-74) (MA-18-75) are not to be considered as coming within the ORR-proposed target allowances or within either the allowed 5% or 10% increments. It is not that we consider aquaculture to be of lower priority but, rather, that we feel that even funded at $220,000, the maximum increment possible (at the 10% level), we could not mount an effective aquaculture study.

The Center deems its resource assessment investigations most clearly merit and would benefit greatly from increased funding. The need to assume annually, from our research funds base, the cost of several vessel charters points up the difficulty with which this hitherto vigorously prosecuted program must struggle. After almost three years of discussion at all levels and in

all regions of the NMFS, we find that we are no closer today to an acceptable groundfish catch analysis program than we were in fiscal '70 at the inception of NOAA. We therefore recommend that the highly successful Port-Pool operations in New England be extended to Cape Hatteras by use of contracts with the several states. We propose that a major part of the 10% increment funding be devoted to this contractual effort to realize a more quantitative catch and landings analysis in the Middle Atlantic Bight - almost imperative now if we are to function effectively in ICNAF. We propose also that part of the increment be devoted to improving the quantitative aspects of the entire resource assessment operation and to provide the data management and analysis services involved.

MESA (Reimbursable) - New York Bight studies (TDP MA-30-74) is submitted both to afford ORR a complete picture of our research operations and to demonstrate the effect of NOAA-MESA funding, when received, upon NOAA/NMFS/MACFC-Ecosystems Programs in the Bight. Total manpower, now proposed for MESA-funding, is herein charged to NMFS within the approved target allowance, pending receipt of NOAA-MESA '73 and '74 funds. As of April 2, 1973, the MACFC proposal to MESA had not been approved, so cannot be integrated into our 1974 funding for purposes of the present submission.

The research TDP's contain no funds for equipment purchases. The target funding of 2.29 million for FY 1974 is so far below our current budget that we cannot contemplate spending in this category. If, however, additional funds become available in FY 1974, there would be equipment items which should be purchased.

In further explanation of our submission, please note the following:

MA-04-75: Since this task involved initiation only in FY 1975 and only upon receipt of funding, no abbreviated TDP is submitted.

MA-19-75) These TDP's dealing with separate aspects of aquaculture, and
MA-20-75) submitted as being effective in fiscal '75 upon receipt of specific
MA-21-75) appropriations are represented by TDP (MA-56-74) Biological
MA-22-75) Development of Aquaculture, pending clarification of the division
MA-23-75) of labor between ORR and CRU in this field. Our submission incorporates all strictly biological aspects of molluscan aquaculture development and will be divided into appropriate tasks upon clarification of the Center's responsibilities in such work.

MA-28-75) These TDP's, submitted to measure costs in Extension and Water
MA-29-75) Resources activities, were terminated according to a national decision. No terminal TDP's will be submitted unless required. Manpower and funding for both TDP's are transferred as follows:

MA-28-75 - 1973 and 1974 costs: $12.5 and one manyear --- MA-05-74
MA-29-75 - 1973 and 1974 costs: $12.5 and one manyear --- MA-10-74

Attachments

TASK DEVELOPMENT PLANS

FY 1974

MIDDLE ATLANTIC COASTAL FISHERIES
CENTER

March 30, 1973

INDEX

1. Memo of Transmittal and Explanatory Statements .....

2. Crosswalk -- FY 1973 Programs to FY 1974 Tasks .....

3. Chart, 1973 Organizational Structure .....

4. Chart, 1974 Task-oriented Organizational Structure .....

5. Task Development Plans .....

Crosswalk - FY 1973 to FY 1974
(compatible with FY 1975 TDP crosswalk submitted Jan. 3, 1973)

FY 1973	Reprogramming	FY 1974
A. Resource Assessment Investigations		
1. Ichthyoplankton Investigation	Terminate survey work at end of FY'73, redirect program to early life history studies	Life studies, prerecruit Middle Atlantic Bight (MA-53-74)
2. Coastal Resource Investigation	Augment with staff from Estuarine Resource Investigation and part of Ichthyoplankton Investigation	MARMAP II -- Multi-species, Middle Atlantic Bight (MA-02-74)
3. Estuarine Resource Investigation	Terminate at end of FY'73, staff transferred to MARMAP II, Multi-species, Middle Atlantic Bight	
4. ----------	Begin biostatistics program at modest in-house level, supplemented by contracts	Biostatistics, Middle Atlantic Sportfish (MA-05-74)
5. Behavior and Physiology Investigation	Transfer at end of FY'73 to Eco-systems Investigations, reorient program to study behavior under pollution stress	

FY 1973	Reprogramming	FY 1974
B. Ecosystems Investigations		
1. ------	Transfer behavior work from Resource Assessment Investigations at end of FY 1973, reorient to studies of behavior under pollution stress	Behavior of fishes under pollution stress (MA-06-74)
2. Marine Contaminant and Coastal Ecosystems Investigation	Reprogram at end of FY 1973 to reflect fact that two tasks are implicit in present program title	Impact of Environmental Change, Middle Atlantic (MA-07-74) Biochemical Modeling, Middle Atlantic (MA-08-74)
3. Environmental Microbiology and Chemistry Investigation	Change title to ----------	Microbiology and Chemi: Middle Atlantic (MA-09-74)
4. Biological Oceanography Investigation	Change title to ----------	Impact of Environmental Change, New York Bight (MA-10-74)
5. Environmental Rehabilitation Investigation	Terminate at end of FY 1973. Transfer staff to Impact of Environmental Change, New York Bight	

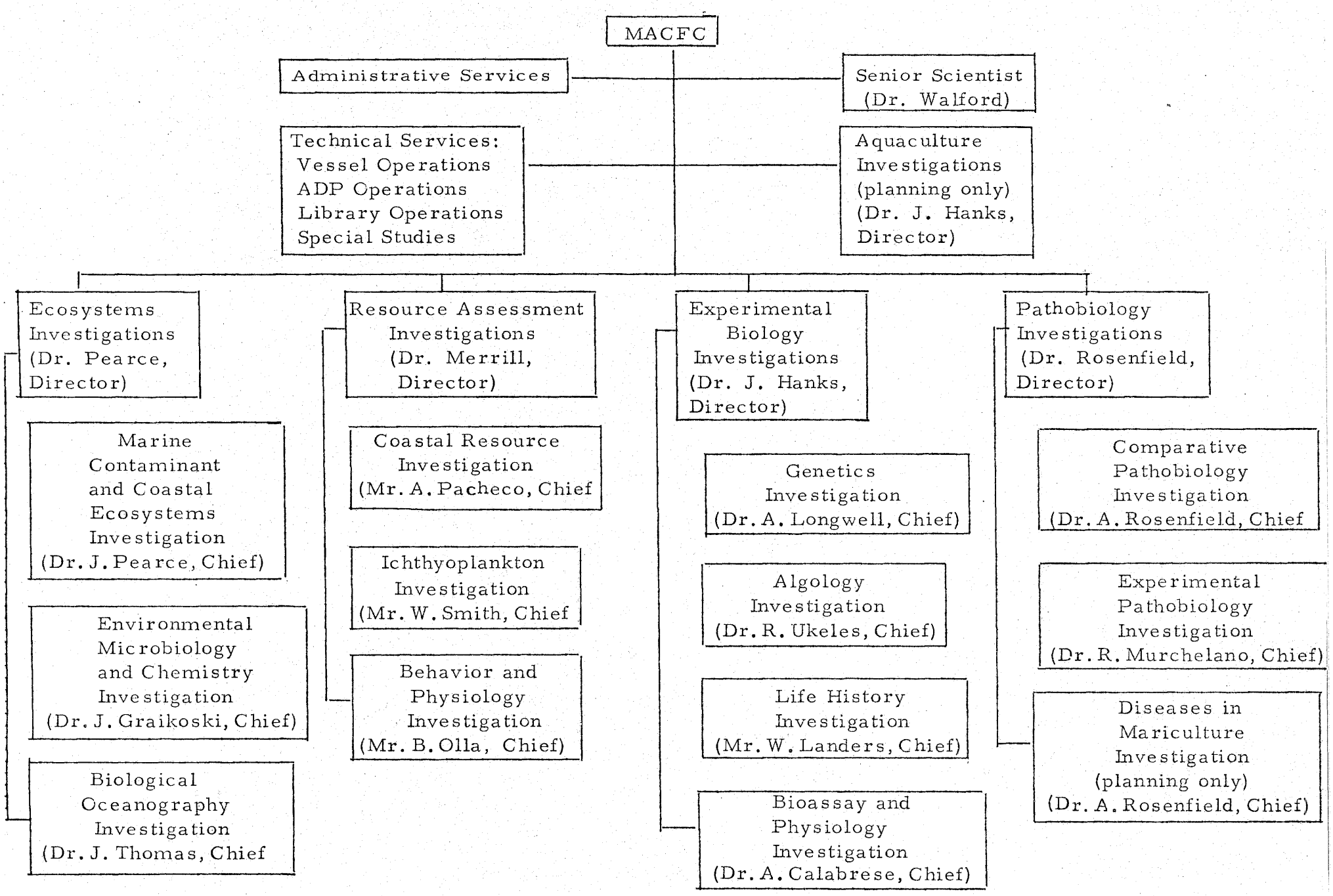
FY 1973	Reprogramming	FY 1974
C. Experimental Biology Investigations		
1. Life History/Water Quality Investigation	Change title to ----------	Contaminants Analysis, rearing of test animals (MA-12-74)
2. Algology Investigation	Change title to ----------	Effects of Contaminants on Algae (MA-13-74)
3. Genetics Investigation	Change title to ----------	Mutagenic Effects of Pollutants (MA-14-74)
4. Bioassay and Physiology Investigation	Change title to ----------	Physiological Effects of Pollutant Stress (MA-15-74)

FY 1973	Reprogramming	FY 1974
D. Pathobiology Investigations		
1. Experimental Pathobiology	Change title to ----------	Disease and Environment Stress (MA-17-74)
2. Comparative Pathobiology	----------	Comparative Pathobiolog (MA-16-74)

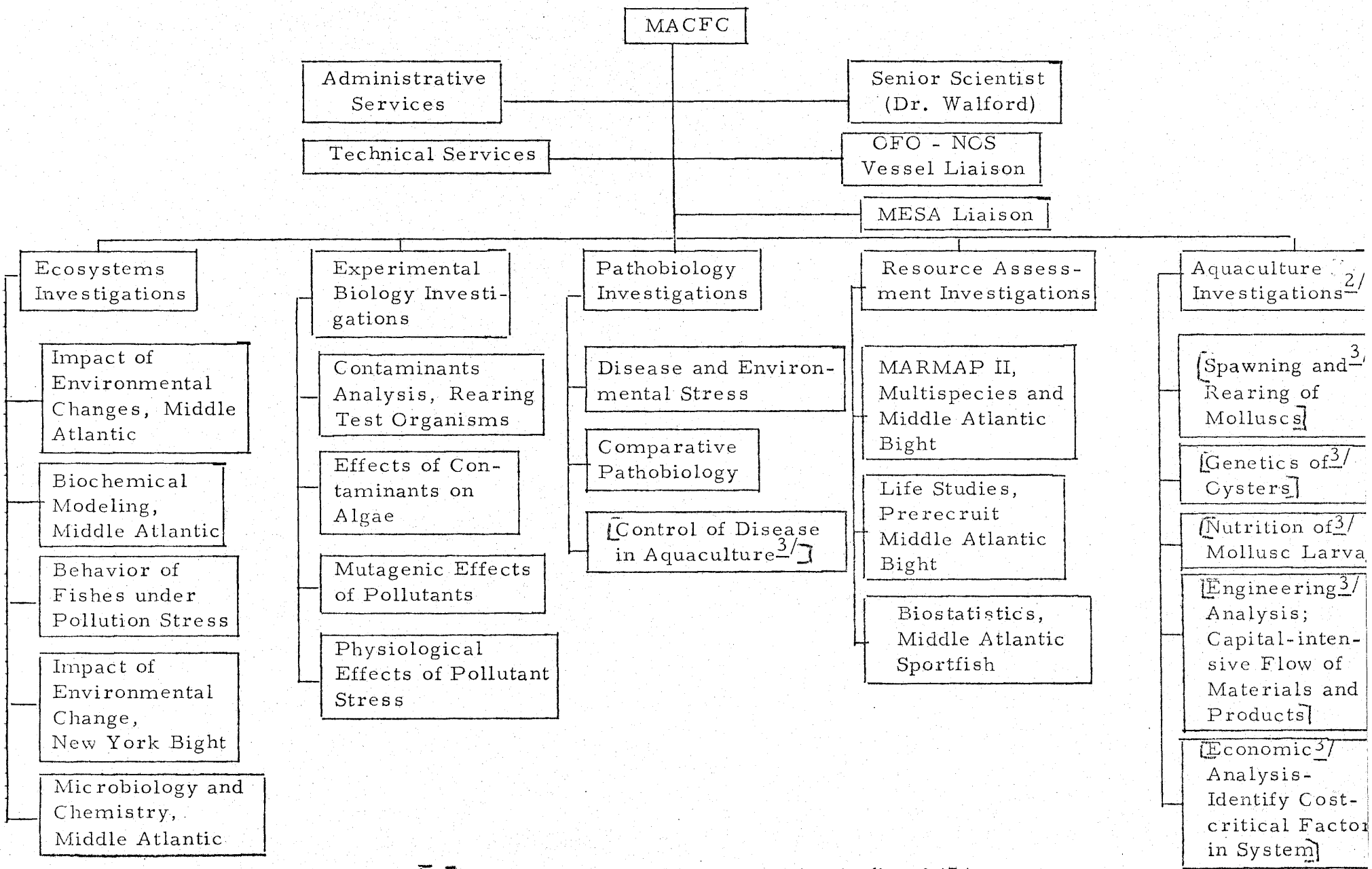
FY 1973	Reprogramming	FY 1974
E. Aquaculture Investigations	(MA-19, 20, 21, 22 and 23 combined in a single TDP for FY 1974 abbreviated submission, but outlined in 6 separate TDP's in FY 1975 submission)	
1. ----------	New activity in FY 1974 ----------	Control of Disease (MA-18-74)
2. ----------	" " " " " ----------	Spawning and Rearing of Molluscs (MA-19-74)
3. ----------	" " " " " ----------	Genetics of Cysters (MA-20-74)
4. ----------	" " " " " ----------	Food Rearing for Larva (MA-21-74)
5. ----------	" " " " " ----------	Engineering Analysis -- Capital Intensive Flow c Material and Products (MA-22-74)
6. ----------	" " " " " ----------	Economic Analysis, Cost-critical Factors (MA-23-74)

Combined as single FY 1974 TDP

ORGANIZATION CHART, MACFC FOR FY 1973



TASK-ORIENTED ORGANIZATION CHART, MACFC FOR FY 1974



1/ Tasks surrounded by brackets [ ] indicate proposed new activities in fiscal '74

3/ All tasks assigned to Aquaculture Research and Technology line item

ALLOCATION OF FUNDING INCREASES

FY 1974

rm 4-a

1. Center	2. Estimate Number	3. Date
Middle Atlantic Coastal Fisheries Center	2	March 30, 1973

4. TDP Title	5. TDP#	6. Est. #1 Total $	7. Incr'l Cost	8. Task Modification Resulting from Incremental Funding
A research TDP's in this submission			133.0	Use to augment personal services funding to enable retention of at least some temporaries and intermittents, particularly work-study people, otherwise be terminated with funds allowed under estimate #1

ALLOCATION OF FUNDING INCREASES

FY 1974

rm 4-a

1. Center	2. Estimate Number	3. Date
Middle Atlantic Coastal Fisheries Center	3	March 30, 1973

4. TDP Title	5. TDP#	6. Est. #1 Total $	7. Incr'l Cost	8. Task Modification Resulting from Incremental Funding
Biostatistics, Middle Atlantic Sportfish	MA-05-7~~5~~4		73.0	Expand sportfish statistical sampling thru contracts with states for port agents
MARMAP II, Multi-species, Middle Atlantic	MA-02 7~~5~~4		60.0	Improve quantification capabilities for sportfish species --statistical analysis of catch and survey data

1. Task Number

MA-02-74

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33400	1	SII

5. Div.
Resource Assessment Investigations

6. Task Title
MARMAP-II, Multispecies, Middle Atlantic Bight

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	131.0	184.7
8. Contract Services	20.2	60.0
9. Major Equipment	4.7	
10. Boats and Facilities		
11. All Other Direct Classes	11.8	10.0
12. TOTAL DIRECT COST	167.7	254.7
13. Administrative Support	20.1	27.6
14. Technical Services	70.8	102.1
15. TOTAL TASK COST	258.6	384.4
16. Positions, Permanent	11	11
17. Positions, Other	7.0	
18. Man-Years, Permanent	11.0	11.0
19. Man-Years, Other	5.7	

21. Approved
John Holstar

22. Date
March 30, 1973

20. Description:

Assessment effort has the goal of understanding dynamics of the trawlable fish community, with particular emphasis on inshore migratory species seasonally inhabiting waters of the Middle Atlantic Bight. Meeting this broad objective requires coordinating survey data among fishery centers and interested state agencies. Specific objectives are to monitor fluctuations in fish abundance, describe distribution of all species captured, and their component sizes, ages and other biological attributes with respect to location and hydrographic factors. In addition, detailed life history information of priority species is required for creating population dynamics models and in drawing up recommendations for sound conservation of the resources.

Current sampling is predicated on a stratified random design contiguous to depths and areas occupied by NEFC. Our joint surveys now extend coverage offshore from Nova Scotia to Cape Canaveral and into the nearshore area inside of 15 fathoms. Besides providing information on distribution and density of finfish cruises provide a prime source of specimen materials for food habit, fecundity, age and morphometric studies for species intensive research of selected constituents of the fishable community. Cruises are also designed to provide plankton samples from selected stations to the life studies investigation and also fish tissues to the contaminant investigation. Through length and age analysis, information on distribution and numbers of the prerecruit fraction of the population is available to the life history investigation studying the relative abundance of early life stages of coastal fishes.

Shellfish assessment obtains data on recruitment, growth and mortality to determine harvestable fractions. The clam and scallop resources between Cape Cod and Cape Hatteras are the targets of prime interest. To meet these objectives, we plan a biannual cruise series coordinated to the fullest extent with interested state agencies. The information will be used to compare with previous similar surveys of shellfish and the resultant analyses will be made available to appropriate management units.

FY 74 plans are to:

1. Coordinate effort by working closely with NEFC in developing and using a uniform species coding and data recording format.

2. Conduct a fall and spring groundfish cruise which will include a set of strata within the 15-fathom contour from the area of Cape Cod to Cape Canaveral; results to be correlated with those from cooperative surveys conducted in deeper waters; information supplied to data bank at the Woods Hole Center.

3. Evaluate fishing power of sampling nets by comparative tow experiments conducted during inshore and offshore survey cruises.

4. Analyze age, growth, fecundity and feeding of selected species, predominantly sciaenids and bothids.

5. Conduct two standard dredge surveys in the middle Atlantic area -- one for epibenthic forms, such as scallops and lobsters; the other for infauna, such as surf and mahogany clams. Analyze results and make information available to interested user groups.

6. Produce and continually update briefing books highlighting biological facts, fishery developments and statistics of catch and effort on the species of principal concern to sport fishermen of the Bight. These books will also serve as documentary summary sources of information for use in bilateral negotiations necessary in establishing management strategies.

#8 -Contract Services:

The $60.0 in contract services are for three 20-day groundfish survey cruises during fiscal '74. Charters are necessary due to lack of a vessel capable of extended operations from Block Island to Cape Hatteras.

F33400
Resource Assessment Investigations
MARMAP-II, Multispecies, Middle Atlantic Bight

TITLE	Grade	Name	Time
Fish. Biologist (Admin.)	GS-15	A. Merrill	100%
Fish. Biol. (Res.)	GS-13	W. Shaw	100%
Fish. Biol. (Res.)	GS-12	A. Pacheco	100%
Fish. Biol. (Res.)	GS-12	J. Ropes	100%
Fish. Biol. (Res.)	GS-11	R. Lippson	100%
Fish. Biol. (Res.)	GS-11	S. Wilk	100%
Fish. Biologist	GS-9	T. Azarovitz	100%
Fish. Biologist	GS-7	W. Morse	100%
Fish. Biologist	GS-7	Myron Silverman	100%
Biol. Lab. Tech.	GS-6	D. McQuay	100%
Biol. Aid	GS-4	S. Roberts	100%

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

MA-05-74

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33400	2	FA(TS)

5. Div.
Resource Assessment Investigations

6. Task Title
Biostatistics: Middle Atlantic Sportfish

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	22.8	14.4
8. Contract Services	3.0	10.0
9. Major Equipment		
10. Boats and Facilities		
11. All Other Direct Classes	5.5	3.0
12. TOTAL DIRECT COST	31.3	27.4
13. Administrative Support	3.5	2.1
14. Technical Services	13.2	11.0
15. TOTAL TASK COST	48.0	40.5
16. Positions, Permanent	1	1
17. Positions, Other	2	
18. Man-Years, Permanent	1.0	1.0
19. Man-Years, Other	1.1	

21. Approved
John Holston

22. Date
March 30, 1973

20. Description:

Although fluctuations in fish abundance may be caused by natural changes in environment, the effects of man's fishing is the most controllable factor affecting abundance. Recent surveys indicate the angler harvest to constitute significant fractions of species landings. Although the objective of this task is to develop a coordinated system of generating reliable information on the biostatistics of different elements of the sport fishing community, the current program will be set at a minimal level because of funding and staffing restrictions. Even at this level we can derive an index of fishing pressure and species yields.

Primary information is needed on species, fish size, location of catch, method of fishing and composition of discards. We plan to work on developing sampling design with limited use of port agents in a preliminary effort aimed to survey the party boat fleet at Point Pleasant and Cape May, New Jersey; Ocean City, Maryland; and Cape Charles, Virginia. We will interface with state agencies also interested in monitoring sport fish harvest and, where feasible, contract where there is a stated interest in developing or expanding an ongoing state program. We will foster the establishment of uniform sampling and reporting.

FY'74 plans are to:

1. Keep close liaison with the commercial fishery statistical records and other NMFS efforts to improve information about the economic value of fisheries.
2. Start angler interviews on a minimal level until the national household survey is implemented by Branch of Statistics and Market News.

3. Make direct observations on composition of catch by sportfish charter vessels.
4. Acquire biological samples through the existing port sampling pool, special laboratory collections or contracted services with state or university fishery units.
5. Prepare specifications for a possible FY'75 contract to design angler survey techniques based on a cost-reliability approach.

Title	Grade	Name	Time
Fishery Biologist (Res.)	GS-9	B. Freeman	100%

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33400	6	LS

5. Div.
Resource Assessment Investigations

6. Task Title
Life Studies: Prerecruit Middle Atlantic Bight

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor		122.3
8. Contract Services		
9. Major Equipment		
10. Boats and Facilities		
11. All Other Direct Classes		11.0
12. TOTAL DIRECT COST		133.3
13. Administrative Support		18.3
14. Technical Services		53.5
15. TOTAL TASK COST		205.1
16. Positions, Permanent		9
17. Positions, Other		
18. Man-Years, Permanent		9.0
19. Man-Years, Other		

21. Approved John Olsten

22. Date March 30, 1973

20. Description:

Recruitment is one of the major factors determining the size of heavily exploited fish populations such as those found along the Middle Atlantic Bight. To manage coastal fish populations, we must conduct life studies that include prerecruits (young-of-the-year and adolescents) as well as the postrecruits, or adults.

The mission of the Prerecruit Life Studies Project is to understand the early life history and population dynamics of coastal fishes prior to their recruitment into the sport or commercial fisheries, emphasizing those species that are found nearshore. Of the 10 most important coastal species in terms of total combined sport and commercial catch between New York and Cape Hatteras, only Atlantic mackerel and possibly bluefish are not dependent on the shallow coastal areas. The other species depend on the subtidal zone for spawning and/or nursery areas, and even juvenile bluefish and mackerel utilize this area to some extend.

In conjunction with ongoing, coastal finfish assessment surveys, we plan to sample selected coastal areas to determine potential recruitment of important sport and commercial species into their respective fisheries. Prerecruits, as well as postrecruits and hydrographic data, will be collected. Collections of young-of-the-year will be minimal and taken at preselected stations chosen on the basis of previous cruises designed to study the seasonal distribution of eggs and larvae. In addition, we plan to study diurnal activities of young stages and the consequent effect of coastal circulation on their distribution.

Our specific objectives are to monitor fluctuations in the abundance of prerecruits, to determine their distribution in coastal waters, to attempt to correlate fluctuations in abundance and distribution with hydrographic features and to learn more about environmental needs of specific fishes.

FY'74 plans are to:

1. Provide information on prerecruits from in-house collections to user groups through continued analysis and publication of data from previous cruises.
2. Conduct a fall and spring prerecruit fish sampling program in coastal waters concurrently with offshore groundfish surveys described in TDP MA-02-75.
3. Correlate the abundance and distribution of prerecruits from the coastal and offshore surveys and supply these data to the data bank maintained at the Woods Hole Center.
4. Conduct two special field surveys to study transport mechanisms that relate offshore spawning grounds to inshore nursery grounds by investigating diurnal activities of young-of-the-year stages in the Middle Atlantic Bight.
5. Develop basic information on specific life history aspects of coastal fishes.

Title	Grade	Name	Time
Fishery Biologist (Res.)	GS-12	W. Smith	100%
Fishery Biologist	GS-11	D. Christensen	100%
Fishery Biologist (Res.)	GS-11	P. Berrien	100%
Fishery Biologist (Gen.)	GS-11	M. Fahay	100%
Fish. Biologist (Res.)	GS-11	A. Kendall	100%
Biol. Lab. Tech.	GS-7	G. Ward	100%
Biol. Tech.	GS-6	J. Sibunka	100%
Biol. Aid	GS-4	C. DeGorgue	100%
Biol. Aid	GS-4	A. Farman	100%

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

MA-07-74

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33800	3	IE

5. Div.
Ecosystems Investigations

6. Task Title Impact of Environmental Change, Middle Atlantic

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	121.4	80.6
8. Contract Services	10.0	
9. Major Equipment	.8	
10. Boats and Facilities		
11. All Other Direct Classes	13.6	14.0
12. TOTAL DIRECT COST	145.8	94.6
13. Administrative Support	18.6	12.1
14. Technical Services	61.4	37.9
15. TOTAL TASK COST	225.8	144.6
16. Positions, Permanent	7	7
17. Positions, Other	8	
18. Man-Years, Permanent	7.0	7.0
19. Man-Years, Other	5.4	

21. Approved John Holsten

22. Date March 30, 1973

20. Description:
Coastal and estuarine waters are critically important for all or parts of the life cycles of 60-70% of our most valuable marine resources species; coastal and estuarine waters function as feeding, breeding and nursery grounds. Present knowledge of marine and estuarine ecosystems is generally inadequate for making management and allocation decisions. We must increase our understanding of the present condition and dynamics of coastal and estuarine ecosystems so that future resource development and industrialization do not result in continued environmental degradation. New legislation concerned with coastal zone management requires the data resulting from this task.

Task objectives for FY 74 include:
1) Resampling of approximately 60 of original Long Island Sound (LIS) stations and 10 additional stations in August;

2) Complete sorting and identification (first half of FY) and report on benthic macrofauna collected in LIS during 1972 surveys; accomplish majority of sorting of April 1973 samples;

3) report on microbiological studies (Milford) and contracted meiofauna and sediment composition studies;

4) conclude field work on Raritan Bay (RB) benthic census (after taking 176 grab samples), Chapel Hill Channel (50 grabs), and Conoskonk Point (24 grabs);

5) complete sorting and identification of most samples collected during RB benthic census and all remaining samples from other sub-tasks;

6) continue post operational phase of EPA contract study in Sandy Hook Bay;

7) prepare final report for State of New Jersey on Ambrose Channel;

8) begin data analysis of samples from Chapel Hill and Conoskonk Point;

9) sort and identify remaining FY'73 samples collected during New Jersey Surf Clam Census (NJC) using sorters provided through MESA contracts with Northeastern University;

10) submit data from FY'73 NJC samples to NODC-MESA data bank for preparation of MESA atlases and relate benthic distributions to geological data provided by NOAA-AOML to MESA-SHL;

11) continue monitoring Oyster Creek nuclear electric outfall at reduced level (quantitative monthly collections at 5 stations) for long-range thermal effects on benthic macroalgae;

12) and complete reports and publications on zooplankton and ichthyoplankton of western LIS, Navesink and East Rivers.

Title	Grade	Name	Time
Fishery Biologist	GS-12	J. Thomas	100%
Oceanographer	GS-9	W. Phoel	100%
Fishery Biologist (Res.)	GS-9	R. Reid	100%
Fishery Biologist (Res.)	GS-5	R. McGrath	100%
Fishery Biologist (Gen.)	GS-5	F. Steimle	100%
Biological Aid	GS-5	D. Radosh	100%
Biol. Technician (Fish.)	GS-5	L. Rogers	100%

1. Task Number
MA-09-74

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33300	7	

5. Div.
Ecosystems Investigations

6. Task Title Microbiology and Chemistry, Middle Atlantic

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	218.3	177.1
8. Contract Services		
9. Major Equipment	2.7	
10. Boats and Facilities		
11. All Other Direct Classes	31.1	28.0
12. TOTAL DIRECT COST	252.1	205.1
13. Administrative Support	33.4	26.4
14. Technical Services	106.3	82.3
15. TOTAL TASK COST	391.8	313.8
16. Positions, Permanent	12	12
17. Positions, Other	8	
18. Man-Years, Permanent	12.0	12.0
19. Man-Years, Other	4.6	

21. Approved
John Hobson

22. Date
March 30, 1973

20. Description:
Man's activities can change the coastal waters and thereby have a diverse effect on living marine resources. Increased discharges of organic nutrients and chemicals into the aquatic environment, as well as elevation of water temperature, can modify the marine biota both quantitatively and qualitatively. Of immediate concern is to determine the degree to which microbial populations and chemical pollutants can effect living marine resources, as well as the utilization of the resource by man and the environment. Long range objectives are to establish baseline data, both qualitatively and quantitatively, on chemical and microbial (aerobic and anaerobic) levels in the various elements of the ecosystem.

Specific objectives for FY 74 include:
1) Completion of cooperative dump site study, involving areas in New York Bight, Delaware Bay, Long Island Sound for heavy metals in marine animals and sediments and extent of fecal pollution in sediments. Results to date have been summarized in an informal Center document. At least 3 publications concerning the above studies is projected for FY 74. The Long Island Sound study was initiated in FY 73 with the sampling of 159 stations for heavy metals and select microorganisms, as well as areas of fecal pollution in sediments. Approximately half of these stations will be recensused in April 1973 and again in early FY 74;

2) studies on bacterial clearance and antibody response in a finfish exposed to high levels of cadmium will be completed in FY 73-74. Bacterial clearance studies in an invertebrate exposed to industrial chemicals will be initiated in FY 73 and continued in FY 74;

3) fin rot disease study of the New York Bight area will be directed to surveillance of incidence as well as identification of the bacterial isolates obtained. Results of previous work will be published in FY 73 and 74;

4) intensive surveillance and determination of nutritive

requirements of phytoplankters related to red tide problems of the New York Bight will continue. In addition red tide blooms will be monitored for toxicity as a service to the State of New Jersey; and

5) in addition to the above, more concentrated effort and extension to other microbial groups on taxonomy and serological relationships of organisms involved will be made. Continuation of baseline data for heavy metals with particular emphasis on those species of marine animals such as channeled whelk and spiny dogfish, which have shown increased levels of some specific metals. Intensification of baseline data for PCB's. Begin investigations on other chemical contaminates such as PCB's and petroleum waste products. Examine the effects of bacteria on pollutant stressed animals. Extend antigenic studies to other bacterial species, and develop radio-immunoassay techniques for antibody detection in marine animals. Initiate in situ and laboratory set-ups for studies on bacterial population growth and conversion and transforming mechanisms. Particular emphasis will be placed on samples obtained from Long Island Sound and New York Bight. Completion of analysis from the North Atlantic is anticipated in early '74. More extensive sampling of the Chesapeake Bay area will be made if results from preliminary analysis indicate some problem areas.

Ecosystems Investigations
Microbiology and Chemistry, Middle Atlantic

Title	Grade	Name	Time
Superv. Microbiologist	GS-13	J. Graikoski	100%
Chemist	GS-12	R. Greig	100%
Microbiologist	GS-12	R. Robohm	100%
Microbiologist	GS-11	J. Babinchak	100%
Biologist	GS-11	S. Dudley	100%
Fishery Biologist	GS-11	J. Mahoney	100%
Chemist	GS-9	C. Shelpuk	100%
Microbiologist	GS-7	M. Nitkowski	100%
Fishery Biologist	GS-7	J. O'Reilly	100%
Chemist	GS-5	D. Wenzloff	100%
Fishery Biologist	GS-5	J. Ziskowski	100%
Phys. Sci. Aid	GS-4	A. Adams	100%

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

MA-06-74

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33800	12	IE

5. Div.
Ecosystems Investigations

6. Task Title

Behavior of Fishes Under Pollution Stress

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	62.3	53.7
8. Contract Services	19.6	
9. Major Equipment	1.6	
10. Boats and Facilities		
11. All Other Direct Classes	62.1	12.0
12. TOTAL DIRECT COST	145.6	65.7
13. Administrative Support	9.5	8.1
14. Technical Services	61.3	26.4
15. TOTAL TASK COST	216.4	100.2
16. Positions, Permanent	5	5
17. Positions, Other	1	5.0
18. Man-Years, Permanent	5.0	
19. Man-Years, Other	.7	

21. Approved John Holsten

22. Date March 30, 1973

20. Description:

a. Task Objectives FY'74

1. Atlantic mackerel (Scomber scombrus)

To complete investigations on Atlantic mackerel, proposed studies would measure the responses of a small school held under controlled light, temperature and salinity to a gradual decrease in temperature. These findings would determine whether responsiveness diminishes, as it does in certain benthic species, or whether stress results in increased activity indicating that these fish have the capacity to escape potentially lethal thermal levels and are able, behaviorally, to select physiologically optimal thermal regimens. Normal behavior would be established prior to the temperature change with quantitative measures made of a) hourly swimming speed and activity, b) hourly changes in aggregation (schooling), and c) feeding behavior including amounts ingested, time to satiation and speed changes during the feeding. As the temperature decreases, deviations from these established norms would be detected statistically. After defining the permissable temperature limits for this species, these studies will be terminated and preparation of a manuscript will be initiated.

Literature search will be begun on weakfish (Cynoscion regalis) prior to laboratory investigations scheduled for FY'75.

2. Striped mullet (Mugil cephalus)

The proposed task is to establish criteria for normal social behavior of striped mullet under stable environmental conditions by a) measuring quantitatively and analyzing the responsiveness of single test fish to groups of (1) species-mates and (2) different species; and b) measuring quantitatively and analyzing normal feeding

responses of test fish. These results will be used as baseline measures to determine the effects of various temperatures on the mullet. Preparation of the data for publication will be initiated. Preliminary studies, using similar techniques, will be started on juvenile bluefish (Pomatomus saltatrix).

3. Tautog (Tautoga onitis)
Based on previous findings on the habitat requirements and daily movements of a selected population of tautog, this study will be continued further to determine if a differential seasonal habitat requirement exists between younger and older fish. In addition, it will be expanded to describe the interaction of tautog with related species (e.g., cunner) in their habitat. Quantitative measures include direct underwater observations made both day and night to detect (1) trends in activity, (2) differential responsiveness during active and inactive periods, (3) differences in day-night relation to bottom structures, and (4) feeding behavior including forage species, feeding periods and sampling of digestive tracts at selected intervals.

Title	Grade	Name	Time
Fishery Biologist (Res.)	GS-13/3	Bori Olla	100%
Fishery Biologist (Res.)	GS-9/3	C. Samet	100%
Biological Technician	GS-9/3	A. Studholme	100%
Fishery Biologist (Res.)	GS-9/2	A. Martin	100%
Fishery Biologist (Res.)	GS-7/3	A. Bejda	100%

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33800	13	IE

5. Div.
Ecosystems Investigations

6. Task Title Biochemical Modeling, Middle Atlantic

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	99.7	83.2
8. Contract Services		
9. Major Equipment	3.0	
10. Boats and Facilities		
11. All Other Direct Classes	21.9	14.0
12. TOTAL DIRECT COST	124.6	97.2
13. Administrative Support	15.3	12.5
14. Technical Services	52.5	39.1
15. TOTAL TASK COST	192.4	148.8
16. Positions, Permanent	6	6
17. Positions, Other	3	
18. Man-Years, Permanent	6.0	6.0
19. Man-Years, Other	1.9	

21. Approved John Holston

22. Date March 30, 1973

20. Description:

While some information is available concerning levels of heavy metal contamination in the marine environment of the New York Bight area, little is known about the actual states of the metals or of their interactions with organic materials, also in high concentration as a result of dumping activities and other forms of pollution.

In order to construct a model of the effects of organically bound metals on marine animals we will continue the characterization of physiological systems, particularly transport and osmoregulation, likely to be affected by these contaminates. Using Cancer irroratus as a test animal we will:

1) assay effects on Na-K-ATPase of adult gill tissue, and develop procedures for assessing effects on amino acid metabolism in larvae and adults;

2) continue polarographic analysis of the metals, cadmium, chromium, lead, nickel, zinc, and copper in environmental samples;

3) develop procedures for analysis of organics; and

4) begin work on determination of binding constants of metals using polarographic, dialysis and other appropriate techniques.

F33800
Ecosystems Investigations
Biochemical Modeling, Middle Atlantic

Title	Grade	Name	Time
Supv. Fish. Biologist	GS-14	J. Pearce	100%
Fish. Biologist (Res.)	GS-11	R. Tucker	100%
Fishery Biologist	GS-9	J. Young	100%
Botanist	GS-7	C. Evans	100%
Oceanographer	GS-5	A. Matte	100%
Biol. Aid	GS-4	A. Draxler	100%

1. Task Number MA-15-74

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

2. Orgn. Code	3. Rank	4. Mgmt. Category
33300	4	IE

5. Div. Experimental Biology Investigations

6. Task Title Physiological Effects of Pollutant Stress

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	112.3	92.9
8. Contract Services		
9. Major Equipment	24.2	
10. Boats and Facilities		
11. All Other Direct Classes	14.2	21.0
12. TOTAL DIRECT COST	150.7	113.9
13. Administrative Support	17.2	13.8
14. Technical Services	63.5	45.8
15. TOTAL TASK COST	231.4	173.5
16. Positions, Permanent	6	6
17. Positions, Other	6	
18. Man-Years, Permanent	6.0	6.0
19. Man-Years, Other	3.0	

21. Approved John Holstein

22. Date March 30, 1973

20. Description:

Long range Task objectives are:

1. Determine the lethal effects of a large variety of known pollutants individually and in combination on the embryonic, larval, juvenile and adult stages of molluscs, crustaceans and fish in static systems.
2. Determine the long-term sublethal effects of exposure to a large variety of known pollutants on the larval, juvenile and adults stages of mollusks, crustaceans and shellfish in chronic, long-term bioassay systems. Assessment of damage will be that caused by the pollutants on growth, reproduction, metabolism, mutagenic effects or other physiological responses of the various organisms being tested.
3. Define the physiological and biochemical pathways affected and relate them to the metabolic disorders, which results in death or permanent damage to the living marine organism.

Specific FY 1974 objectives are:

1. To chronically expose mulluscs, crabs and fish to long-term sublethal levels of a heavy metal and pesticide or PCB. Specimens will be periodically sampled for histopathological anomalies, changes in enzymological processes, osmoregulatory ability, measurement of growth and determination of reproductive development. The organisms will either be induced to spawn or will spawn naturally and the reproductive potential will be determined. The embryonic forms will be reared through the larval and juvenile stages to determine whether the above physiological conditions were altered or not.
2. Studies of changes in respiration rates of embryonic and larval crustaceans and fish will be determined "in vivo" during exposure to various pollutants.
3. To learn more fully the physiological effects of pollutants on adult marine organisms, studies of neuromuscular (including cardiac) physiology will be conducted. These studies will determine changes in blood pressure, blood oxygen levels, bioelectric potential, body temperature, pH and pCO_2 levels, as well as muscle force displacement of stressed organisms.

4. Enzymological studies will be initiated, and will be continued in FY 1975. At this time, it will be possible, using animals exposed in (1) above, to study specific enzyme systems whose protocols (enzymographic and spectrokinetic) will have worked out. Normal and acute-toxic enzymographic patterns will be worked out as will chronic exposure patterns.

Anticipated accomplishments for FY 1974 are:

1. Studies of the above type will be conducted on various marine molluscs, crustaceans, and fish and completed.
2. The snail, Crepidula fornicata, will be continually exposed to 2 or 3 metals and studies will be completed to determine effects on larval survival and growth, effects on fecundity of the adult animal and changes in mating behavior
3. A chronic exposure bioassay laboratory will be completed in FY 1974 and various test organisms will be set up at various levels of pollution stress for long-term studies of the effect on the entire life cycle of these organisms.

Title	Grade	Name	Time
Fishery Biologist (Res.)	GS-13	A. Calabrese	100%
Biochemist	GS-12	E. Gould	100%
Physiologist	GS-11	E. Thurberg	100%
Biol. Aid	GS-7	M. Dawson	100%
Fish. Biologist (Res.)	GS-7	J. MacInnes	100%
Biologist	GS-7	J. Miller	100%

1. Task Number 12-

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33300	8	IE

5. Div. Experimental Biology Investigations

6. Task Title Contaminants Analysis, Rearing of Bioassay Organisms.

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	129.2	112.9
8. Contract Services		
9. Major Equipment	2.9	
10. Boats and Facilities		
11. All Other Direct Classes	16.1	26.0
12. TOTAL DIRECT COST	148.2	138.9
13. Administrative Support	19.8	16.8
14. Technical Services	62.5	55.7
15. TOTAL TASK COST	230.5	211.4
16. Positions, Permanent	5	6
17. Positions, Other	4	
18. Man-Years, Permanent	6.0	6.0
19. Man-Years, Other	2.0	

21. Approved John Holston

22. Date March 30, 1973

20. Description:

Long Range Task objectives are:

1. Determine the reproductive habits and early development of ecologically and/or commercially important species in the Middle Atlantic Bight about which little is known.
2. Create in the laboratory environments in which various marine organisms can be spawned and their embryos, larvae and juveniles reared in good health.
3. Study water quality and effects of pollutants in the water on the well-being of all classes of organisms being reared must accompany these life history studies if dependable culture methods are to be developed.
4. Investigate the susceptibility of all species for study to disease in the unnatural environment in the laboratory and control of diseases that develop.

Specific FY 1974 objectives are:

1. Initiate studies on crustacean, tunicate and annelid reproduction and development. Include a crustacean genus that has species in two different ecological environments, such as the genus Cancer.
2. Expand water quality and disease studies to include mortality problems that arise in rearing these new species in controlled environments.

Anticipated accomplishments for FY 1974 are:

1. Development of technique for rearing crabs, tunicate and annelid larvae in the laboratory for bioassay studies.
2. Improvement of water quality in holding facilities and the development of techniques for controlling or reducing diseases and mortality of these organisms. The latter studies will be done cooperatively with the MACFC/Oxford, Maryland laboratory.
3. Development of culture methods for several offshore bivalves (surf clam, ocean quahog and deep sea scallop).
4. Development of methodologies for controlled spawning and rearing of crustaceans larvae in the laboratory.
5. Development of an understanding of the effects of ozone-treated seawater as a culture medium on the young of representative marine species.
6. Completion of a water treatment system for treatment of effluent from our chronic bioassay laboratory.

7. Attain a better understanding of the transmission of diseases of postset and juvenile bivalves in the laboratory and to develop control methods for such diseases.

Title	Grade	Name	Time
Director	GS-15	J. Hanks	100%
Fishery Biologist (Res.)	GS-13	W. Landers	100%
Res. Microbiologist	GS-13	W. Blogoslawski	100%
Fishery Biologist (Res.)	GS-9	E. Rhodes	100%
Biologist	GS-7	C. Brown	100%
Fishery Biologist	GS-7	W. Cable	100%

1. Task Number MA-14-74

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33300	10	IE

5. Div. Experimental Biology Investigations

6. Task Title

Mutagenic Effects of Pollutants

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	69.8	66.5
8. Contract Services		
9. Major Equipment	1.6	
10. Boats and Facilities		
11. All Other Direct Classes	10.5	13.0
12. TOTAL DIRECT COST	81.9	79.5
13. Administrative Support	10.7	9.9
14. Technical Services	34.6	31.9
15. TOTAL TASK COST	127.2	121.3
16. Positions, Permanent	5	5
17. Positions, Other	0	0
18. Man-Years, Permanent	5.0	5.0
19. Man-Years, Other	0	0

21. Approved John Holsten

22. Date March 30, 1973

20. Description:

Long Range Task objectives are:

1. Appraise the genetic and reproductive damage resulting from the types of marine contamination which can be mutagenic and/or carcinogenic to marine organisms. The criterion for termination of the various phases of this Task will be assessment of such damage caused by marine pollution on reproduction and recruitment of marine shellfish, particularly oysters, and other invertebrates and fish.

Specific FY 1974 objectives are:

1. Continue studies on mutagenic damage caused by heavy metals and pesticides on embryos of other coastal and estuarine bivalves, such as the surf clam, ocean quahog, deep sea scallop and coot clam. Pollution induced abnormalities will be readily detectable, since breakage and rearrangement of the chromosomes, as well as metabolic distrubances, will lead to errors in cell division.
2. Initiate studies on mutagenic damage caused by heavy metals and pesticides on adult oysters and other bivalve species which have been chronically exposed to sublethal levels of these pollutants.

Anticipated accomplishments for FY 1974 are:

1. Collection of preliminary data on the mutagenic effect of heavy metals and pesticides on eggs of the surf clam, ocean quahog, deep sea scallop and coot clam.
2. Studies will also be completed on the mutagenic effect of heavy metals on oyster embryos.
3. Assessment of damage caused to reproductive cells and spawning capacity.

Title	Grade	Name	Time
Research Geneticist	GS-13	Arlene Mazzone	100%
Fishery Biologist (Research)	GS-9	Sheila Stiles	100%
Fishery Biologist (General	GS-5	James Hughes	100%
Fishery Biologist (Research)	GS-5	Ries Collier	100%
Fishery Biologist (General)	GS-5	David Nelson	100%

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

1. Task Number: MA-13-74

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33300	11	IE

5. Div.
Experimental Biology Investigations

6. Task Title
Effects of Contaminants on Algae

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	49.7	40.2
8. Contract Services		
9. Major Equipment	23.8	
10. Boats and Facilities		
11. All Other Direct Classes	9.5	8.0
12. TOTAL DIRECT COST	83.0	48.2
13. Administrative Support	7.6	6.1
14. Technical Services	35.0	19.3
15. TOTAL TASK COST	125.6	73.6
16. Positions, Permanent	3	3
17. Positions, Other	1	
18. Man-Years, Permanent	3.0	3.0
19. Man-Years, Other	.5	

21. Approved: John Holston

22. Date: March 30, 1973

20. Description:

Long-range Task objectives are:

1) Carry out research that will lead to a further understanding of the effects of marine contaminants in the environment on food chain microorganisms by seeking information that will elucidate basic biological principles. Each phase of this Task will be terminated when a particular parameter being examined is fully understood.

2) Continue refinement of techniques and enlarge upon a culture collection of unicellular micro-algae for the purpose of exposure to various environmental pollutants.

Specific FY 1974 objectives are:

1) Continue maintenance of stock culture collection, purify strains, and make preliminary identifications of unclassified species.

2) Continue bioassay studies on the effect of organic pollutants, such as monohydric and polyhydric alcohols and carboxylic acids, on many different species of marine micro-algae.

3) Continue bioassay studies on the effects of heavy metal ions on many different species of marine micro-algae.

The anticipated accomplishments for FY 1974 are:

1) Studies will be completed on salinity adaptation in a cryptomonad flagellate.

2) Certain phases of study will be completed on the effects of organic pollutants on micro-algae and will be finally completed in FY 1975.

3) Certain studies on the effects of heavy metal ions on micro-algae will be completed.

Title	Grade	Name	Time
Research Microbiologist	GS-13	Ravenna Ukeles	100%
Biological Lab. Tech.	GS-5	William Rose	100%
Biological Lab Tech.	GS-4	Alex McColl	100%

1. Task Number
MA-16-74

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33400	5	Life Studies

5. Div.
Pathobiology Investigations

6. Task Title
Comparative Pathobiology

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	136.0	138.5
8. Contract Services		
9. Major Equipment	3.9	
10. Boats and Facilities		
11. All Other Direct Classes	29.4	27.4
12. TOTAL DIRECT COST	169.3	165.9
13. Administrative Support	20.8	20.7
14. Technical Services	71.4	66.5
15. TOTAL TASK COST	261.5	253.1
16. Positions, Permanent	9	9
17. Positions, Other		
18. Man-Years, Permanent	9.0	9.0
19. Man-Years, Other		

21. Approved
John Holston

22. Date
March 30, 1973

20. Description:

Task objectives are to conduct studies in diagnostic pathology to understand the role of infectious and non-infectious diseases in limiting the abundance of estuarine and marine animals. Fundamental to these objectives are the continuous exploration of histological, histochemical, and ultrastructural (electron microscope) techniques appropriate for the diagnosis of disease in estuarine and marine fish, crustaceans, and mollusks. Specific studies envisioned for 1974 include:

1. Provision of diagnostic services for State and foreign governments, commercial and sport fisheries, sea-food growers and processors.
2. Electron microscope and viral studies of mollusks with "proliferative" lesions.
3. Electron microscope and viral studies of oysters with type A nuclear inclusions.
4. Histopathological studies of blue crabs with "Delaware" disease.
5. Histopathological studies of fish experimentally exposed to cadmium.
6. Histological studies of tumors found in marine fish.

F33400
Pathobiology Investigations
Comparative Pathobiology

Title	Grade	Name	Time
Fishery Biologist	GS-13	R. Murchelano	100%
Fishery Biologist	GS-13	T. Sawyer	100%
Fishery Biologist	GS-12	A. Farley	100%
Histologist	GS-12	P. Johnson	100%
Fishery Biologist (Res.)	GS-11	M. Newman	100%
Biol. Tech.	GS-7	J. Wade	100%
Fish. Biologist (Gen.)	GS-7	F. Kern	100%
Biol. Tech.	GS-5	C. Sullivan	100%
Biol. Aid	GS-4	D. Wright	100%

1. Task Number MA-17-74

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33400	9	Inshore Ecology

5. Div.
Pathobiology Investigations

6. Task Title
Disease and Environmental Stress

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	72.5	66.8
8. Contract Services		
9. Major Equipment	1.6	
10. Boats and Facilities		
11. All Other Direct Classes	21.0	13.6
12. TOTAL DIRECT COST	95.1	80.4
13. Administrative Support	11.1	10.1
14. Technical Services	40.1	32.2
15. TOTAL TASK COST	146.3	122.7
16. Positions, Permanent	3	3
17. Positions, Other	1	
18. Man-Years, Permanent	3.0	3.0
19. Man-Years, Other	1.0	

21. Approved John Holstar

22. Date March 30, 1973

20. Description:

Task objectives are to assess the roles of environmental stresses as inducers or causes of diseases in estuarine and marine animals. Environmental modification may directly cause pathology or may increase the susceptibility of fish, crustaceans, and mollusks to infection by macro- and microparasites. Appraisal of pathology, therefore, is essential to understanding the totality of the effects of environmental degradation. Specific studies envisioned for 1974 include:

1. Characterization of histopathology in prawns infected with a fungus parasite.
2. Epizootiological studies of fin rot in fish from the New York Bight.
3. Bacteriological studies of menhaden mortalities.
4. Histopathological studies of "whirling" menhaden.
5. Taxonomic studies of amoebae in benthos and sediments of the New York Bight.

F33400
Pathobiology Investigations
Disease and Environmental Stress

Title	Grade	Name	Time
Director	GS-14	A. Rosenfield	100%
Res. Microbiologist	GS-12	H. Tubiash	100%
Physiologist	GS-11	J. Bodammer	100%

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

1. Task Number: MA-31-74

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33300		AQ

5. Div.
Aquaculture Investigations

6. Task Title
Biological Development of Molluscan Aquaculture

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	--	106.4
8. Contract Services	--	92.1
9. Major Equipment	--	--
10. Boats and Facilities	--	26.0
11. All Other Direct Classes	--	9.4
12. TOTAL DIRECT COST	--	233.9
13. Administrative Support	--	15.8
14. Technical Services	--	7.0
15. TOTAL TASK COST	--	256.7
16. Positions, Permanent	0	9
17. Positions, Other	0	0
18. Man-Years, Permanent	0.0	12.0
19. Man-Years, Other	0.0	0.0

21. Approved: John Holstow

22. Date: March 30, 1973

20. Description:

The overall objective of this research is to provide quantitative information leading to commercial feasibility of molluscan aquaculture, either in a wholly-controlled system or in combinations of controlled "wild" planting systems. The work is needed because increased exploitation of the nation's estuaries and coastal zones has markedly reduced the areas available for abundant production of diseased and pathogen-free molluscs.

The specific objectives of this task are:

1. Perfect systems for year-round induction of spawning by breed-stocks of oysters, surf clams, scallops (bay and ocean) and quahogs (in order to eliminate the high costs and delays implicit in awaiting highly seasonal "wild" spawning) and for rearing of eggs and larvae.
2. Perfect systems of genetic selection whereby organisms may be developed of optimal disease and stress-resistance and of optimal rates of development and growth.
3. Perfect systems of both algal nutrition and molluscan nutrition, leading to maximal growth rates and "plumpness", at least cost per unit of food.
4. Cooperate with other researchers in demonstrating disease-controls, optimal densities of organisms, and automated feeding and handling practices in existing tank-farms and field operations.
5. Develop, largely by contract, automated systems for hatchery and grow out phases of molluscan aquaculture. Conduct, largely by contract, economic analysis of such systems of molluscan aquaculture. (Note: these aspects may be assigned to other NMFS groups for implementation).

Aquaculture Investigations
Biological Development of Molluscan Aquaculture

Title	Grade
Fishery Biologist	GS-11
Nutritionist	GS-11
Fishery Biologist	GS-9
Biol. Technician	GS-7
Fishery Technician	GS-7
Phys. Sci. Tech. (Nutrition)	GS-7
Biol. Aid	GS-4
Biol. Aid	GS-4

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

MA-18-74

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33400		AQ

5. Div.
Pathobiology Investigations

6. Task Title

Control of Diseases

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	--	34.5
8. Contract Services	--	47.5
9. Major Equipment	--	--
10. Boats and Facilities	--	--
11. All Other Direct Classes	--	3.1
12. TOTAL DIRECT COST	--	85.1
13. Administrative Support		6.2
14. Technical Services		3.1
15. TOTAL TASK COST		94.3
16. Positions, Permanent	0	3
17. Positions, Other	0	0
18. Man-Years, Permanent	40.0	3.0
19. Man-Years, Other	0.0	0.0

21. Approved John Holston

22. Date March 30, 1973

20. Description:

The overall objective of this task is to conduct scientific studies on the rate of disease in aquaculture (problems implicit in transfer of susceptible eggs, larvae, fry and fingerlings among hatcheries or even among tanks) so that the adverse effects of disease on the commercial feasibility of aquaculture can be prevented, minimized, or eliminated.

The specific objectives are:

1. Establish a national diagnostic laboratory with data banks to identify, classify, describe and disseminate information on infectious and non-infectious diseases in propagated marine organisms.
2. Initiate cooperative studies of bacterial and protozoan diseases of larval oysters, scallops and clams with existing hatchery facilities at Milford, Conn., U. of Delaware, Lewes, Del., VIMS, Wachapreague, Va. and others as requested.
3. Implement diagnostic services with State and Federal organizations engaged in aquaculture operations.
4. Initiate diagnostic-histologic services on foreign and domestic animals intended for import or intra-nation transport.
5. Initiate in vitro tissue and cell culture systems for growth and cytopathology studies.

#8 - Contract Services: Contracts are for histological and diagnostic services; present personnel limitations preclude any significant increase in-house in these areas (see specific objective #5).

Title	Grade
Microbiologist	GS-11
Microbiol. Technician	GS-7
Microbiol. Aid	GS-4

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

MA-55-74

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33800		IE

5. Div.
Ecosystems Investigations

6. Task Title
MESA-funded New York Bight Studies

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	23.7	94.8
8. Contract Services	176.0	110.5
9. Major Equipment	44.5	--
10. Boats and Facilities	33.0	48.0
11. All Other Direct Classes	19.5	19.5
12. TOTAL DIRECT COST	296.7	272.8
13. Administrative Support	6.3	25.2
14. Technical Services	--	--
15. TOTAL TASK COST	303.0	298.0
16. Positions, Permanent		
17. Positions, Other		
18. Man-Years, Permanent		
19. Man-Years, Other		

21. Approved
Carl Sudermann

22. Date
March 30, 1973

20. Description:

Tasks under MESA funding includes proposed biological research in the New York Bight conducted by the Middle Atlantic Coastal Fisheries Center or proposed to be done by contract.

The overall objective of MACFC New York Bight research is to develop information which will enable assessment and prediction of the impact of man-induced environmental changes on marine ecosystems and on the living marine resources of the New York Bight. General approaches include the following:

Details of work to be done can be found in the following MACFC document: "Task Development Plans -- FY 1975" (dated January 3, 1973); "Biological Baselines and Effects of MESA" (in two volumes, submitted January 18, 1973; and "Synopsis -- Middle Atlantic Coastal Fisheries Center Operating Plan for Biological Studies of the New York Bight during FY 1973" (dated February 5, 1973). Proposed research attempts to respond to problems identified in an earlier (February, 1972) 9 volume MACFC document "The Effects of Waste Disposal in the New York Bight."

In the detailed planning document (A Proposal by the Middle Atlantic Coastal Fisheries Center, NMFS, for MESA Funding of New York Bight Studies -- MACFC Informal Report No. 13, dated March 26, 1973) ten tasks were identified. These are not listed separately here since the proposal has not been approved by the NOAA-MESA Program Office as of the date of submission of the FY 1974 TDP documents.

Ecosystems Investigations
MESA-funded New York Bight Studies

Title	Grade	Cost	Time
Supervisory Fish. Biol.	GS-12	NMFS-funded	100%
Fishery Biologist	GS-9	$18.0	100%
Fishery Oceanographer	GS-9	15.2	100%
Fishery Biologist	GS-7	11.2	100%
Fishery Biologist	GS-7	10.8	100%
Fisheries Techn.	GS-6	8.8	100%
Fish. Biologist	GS-5	8.8	100%
Fish. Tech.	GS-5	8.8	100%
Biol. Aid	GS-4	6.0	100%
Biol. Aid	GS-4	7.2	100%

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

MA-11-74

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33800		I.E.

5. Div.
Ecosystems Investigations

6. Task Title
Ecology of Artificial Reefs

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	7.9	
8. Contract Services		
9. Major Equipment		
10. Boats and Facilities		
11. All Other Direct Classes	2.0	
12. TOTAL DIRECT COST	9.9	
13. Administrative Support	1.3	
14. Technical Services	4.2	
15. TOTAL TASK COST	15.4	
16. Positions, Permanent	1	
17. Positions, Other	0	
18. Man-Years, Permanent	.7	
19. Man-Years, Other	0	

21. Approved John Holston

22. Date March 30, 1973

20. Description:

This investigation, in the planning phase in FY 1973, requires substantial manpower for full effectiveness. With continuing personnel restrictions, it was considered necessary to defer activation of field work until a later date, possibly under MESA funding at that time.

1. Task Number

MA-10-75

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33800		IE

5. Div. Ecosystems Investigations

6. Task Title

Impact of Environmental Change, Middle Atlantic Bight

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	57.6	
8. Contract Services	11.2	
9. Major Equipment	.7	
10. Boats and Facilities	--	
11. All Other Direct Classes	7.7	
12. TOTAL DIRECT COST	76.7	
13. Administrative Support		
14. Technical Services		
15. TOTAL TASK COST		
16. Positions, Permanent		
17. Positions, Other		
18. Man-Years, Permanent		
19. Man-Years, Other		

21. Approved John Holstine

22. Date March 30, 1973

20. Description:

This task is to be terminated as of June 30, 1973 and merged with the larger TDP MA-07-74 which has the same objective and encompasses the entire Middle Atlantic area. In the event that more intensive studies in the New York Bight, especially in the "Apex" area of the Bight, are necessary, this work will be supported under MESA.

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

MA-01-74

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33800		SI

5. Div.
Resource Assessment Investigations

6. Task Title
MARMAP; R&D; Survey #1

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	113.0	
8. Contract Services	2.3	
9. Major Equipment	1.7	
10. Boats and Facilities		
11. All Other Direct Classes	24.8	
12. TOTAL DIRECT COST	141.8	
13. Administrative Support	17.4	
14. Technical Services	59.8	
15. TOTAL TASK COST	219.0	
16. Positions, Permanent	9	
17. Positions, Other	2	
18. Man-Years, Permanent	9.0	
19. Man-Years, Other	1.3	

21. Approved
John Holston

22. Date
March 30, 1973

20. Description:

This task is to terminate as of June 30, 1973 as a result of national decision to suspend "survey" aspects of MARMAP #1 (MA-01-75). Manpower and funds are to phase into (MA-53-74) Life Studies: Prerecruits, Middle Atlantic Bight. This urgently needed aspect of assessment research will enable us also to utilize effectively the data developed to date by the suspended surveys. Manpower for the new project includes part of the staff of the TDP (MA-03-75), Estuarine Fish and Shellfish, Middle Atlantic Bight, also terminated as of June 30, 1973.

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

MA-03-75

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33400		SII

5. Div.
Resource Assessment Investigations

6. Task Title
MARMAP II - Multispecies, Middle Atlantic Bight

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	113.3	--
8. Contract Services	--	--
9. Major Equipment	1.5	--
10. Boats and Facilities	--	--
11. All Other Direct Classes	9.0	--
12. TOTAL DIRECT COST	123.8	
13. Administrative Support		
14. Technical Services		
15. TOTAL TASK COST		
16. Positions, Permanent		
17. Positions, Other		
18. Man-Years, Permanent		
19. Man-Years, Other		

21. Approved
John Holston

22. Date
March 30, 1973

20. Description:

This task (MA-03-75) is to be terminated as of June 30, 1973 in order to strengthen effectiveness of offshore assessment of prerecruits and adults. No prospects presently exist for funding of this task at an effective level. Manpower and funds are to be phased into TDP (MA-02-74) MARMAP II, Multispecies, Middle Atlantic Bight and into TDP (MA-53-74) Life Studies, Prerecruits, Middle Atlantic Bight.

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

MA-24-74

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33000		Adm. Support

5. Div.
Middle Atlantic Coastal Fisheries Center

6. Task Title

General Administrative Support

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	194.6	180.1
8. Contract Services	4.9	
9. Major Equipment	2.3	1.0
10. Boats and Facilities		
11. All Other Direct Classes	66.4	48.9
12. TOTAL DIRECT COST	268.2	230.0
13. Administrative Support		
14. Technical Services		
15. TOTAL TASK COST		
16. Positions, Permanent	13	13
17. Positions, Other		
18. Man-Years, Permanent	13.0	13.0
19. Man-Years, Other		

21. Approved John Holsten

22. Date March 30, 1973

20. Description:

Provides executive management and direction for the Principal Investigations teams of the Middle Atlantic Coastal Fisheries Center. Serve as focal point for planning, reprogramming, budget development and utilization of Center personnel, funds, physical facilities, supplies, and equipment.

Administrative personnel are assigned to the Center and to each of three geographically separated research facilities to provide a variety of administrative services in personnel, property, travel, and facility management.

They also assist the Directors of Investigations and Officer-In-Charge of the facilities to insure that required records are maintained and that policies, regulations, and procedures of the Center and higher authority are being complied with.

FY'74 #9 - 2 typewriters = 1.0

Title	Grade	Name	Time
Center Director	GS-15	Carl Sindermann	100%
Deputy Center Director	GS-15	John Holston	100%
Secretary (typing)	GS-6	Kathe Melkers	100%
Adm. Officer	GS-12	Daryl Mayberry	100%
Gen. Acct. Clerk	GS-5	Betty Morton	100%
Adm. Clerk	GS-6	Helen Pawlikowski	100%
Personnel Clerk	GS-4	June Schadt	100%
Clerk	GS-3	Dorothy Jeffress	100%
Adm. Officer	GS-11	William O'Connell	100%
Clerk Typist	GS-4	Mary Ann Smith	100%
Clerk Typist	GS-3	JoAnn Bridges	100%
Adm. Assistant	GS-7	James Clarke	100%
Clerk Typist	GS-5	Estelle Frauenberger	100%

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

MA-54-74

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33000		Technical Services

5. Div.
Middle Atlantic Coastal Fisheries Center

6. Task Title
Technical Operational Services

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	171.8	193.4
8. Contract Services	20.0	
9. Major Equipment	3.5	
10. Boats and Facilities	20.0	28.0
11. All Other Direct Classes	109.0	149.7
12. TOTAL DIRECT COST	324.3	371.1
13. Administrative Support	26.4	28.8
14. Technical Services		
15. TOTAL TASK COST	350.7	399.9
16. Positions, Permanent	15	15
17. Positions, Other	5	
18. Man-Years, Permanent	15.0	15.0
19. Man-Years, Other	4.1	

21. Approved
John Holston

22. Date
March 30, 1973

20. Description:

Provide equipment repair and maintenance service as well as technical allustrational and reproductive services to the staffs at the three Center facilities. Provide for electrical and electronic trouble-shooting needs and periodic tune-up services to all scientific equipment and built-in facility services. In concert with authors, prepare realistic drawings of all stages in the life history of living marine organisms and graphs of scientific findings.

#10-Modification of electrical service 22.0
Modification of laboratory rooms 6.0

Title	Grade	Name	Time
Clerk-typist	GS-3	Elizabeth Leimburg	100%
Secretary (steno)	GS-5	Jane Swann	100%
Clerk-typist	GS-3	Nadine Wheatley	100%
Tech. Publ. Ed.	GS-9	Rita Riccio	100%
Clerk	GS-2	Donna Sanchez	100%
Clerk-typist	GS-2	Nancy Jacobs	100%
Foreman - Cab. Maker	WL-11	William Allan	100%
Laborer	WG-3	Solomon Adams	100%
Maintenance Man	WG-8	Solomon James	100%
Laborer	WG-3	Kenneth Provost	100%
Janitor	WG-2	Andrew Onofrey	100%
Carpenter	WG-9	Peter Rosenberg	100%
Cabinet Maker	WG-11	Edward Lauer	100%
Maintenance Man	WG-8	Arthur Mellish	100%

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

MA-52-74

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33000		Technical Services

5. Div.
Middle Atlantic Coastal Fisheries Center

6. Task Title
Small Vessel Operations

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	52.5	53.2
8. Contract Services	10.1	
9. Major Equipment	2.5	9.9
10. Boats and Facilities	11.3	11.3
11. All Other Direct Classes	5.8	16.1
12. TOTAL DIRECT COST	82.2	90.5
13. Administrative Support	8.1	7.9
14. Technical Services		
15. TOTAL TASK COST	90.3	98.4
16. Positions, Permanent	5	5
17. Positions, Other	0	0
18. Man-Years, Permanent	5.0	5.0
19. Man-Years, Other	0	0

21. Approved
Carl Ruderhausen

22. Date
March 30, 1973

20. Description:

Preserve, maintain and operate the small vessel fleet (9 vesseld of from 16' to 65' LCA), providing at-sea services for professional personnel at all three facilities of the Center. Operate vessels in such manner (12-hour day; up to 200 sea-days per year) as to facilitate achievement of cruise objectives. Provide simple maintenance and all housekeeping services. Plan, schedule and supervise complex maintenance and servicing of vessels. Recognize and be responsive to vessel scheduling assuring that equipment necessary for scheduled cruises is onboard and vessel is ready to sail at appointed time.

#9 - (2) 20' boats	6.4
(2) outboard motors	2.4
(2) radios	1.1
	9.9

#10 Dry Dock R/V Rorqual	8.1
" " " Xyphias	1.0
" " " Alosa	1.1
" " " Shang Wheeler	1.1
	11.3

F33000
Middle Atlantic Coastal Fisheries Center
Small Vessel Operations

Title	Grade	Name	Time
Captain	WB-BA	Irving Wicklund	100%
Deckhand-Cook	WB-BB	Edward King	100%
Boat Operator (Maintenance)	WB-SA	Henry Fisler	100%
Motorboat	WM-04	Joel Singer	100%
Bldg. Repairman	WG-10	Paul Heister	100%

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

MA-51-74

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33000		Technical Services

5. Div.
Middle Atlantic Coastal Fisheries Center

6. Task Title
Technical Library Operations and Services

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	26.4	28.5
8. Contract Services	1.4	1.7
9. Major Equipment		1.0
10. Boats and Facilities		
11. All Other Direct Classes	21.5	22.0
12. TOTAL DIRECT COST	49.3	53.2
13. Administrative Support		
14. Technical Services		
15. TOTAL TASK COST		
16. Positions, Permanent	2	2
17. Positions, Other	2	2
18. Man-Years, Permanent	2.0	2.0
19. Man-Years, Other	.9	.9

21. Approved
Carl Hudemann

22. Date
March 30, 1973

20. Description:

Provide a wide range of library services to all professional staff members of all Center facilities; maintain all journals, serials, reprint files, reference texts, etc., pertaining to the many different scientific disciplines of interest to the Center. Prepare all subscriptions and maintain stocks; catalog all incoming materials, prepare and distribute periodic lists of accessions to the library. Provide literature search capabilities to assist researchers in work planning. Maintain oversight of journals, calling attention of interested researchers to articles appearing in obscure periodicals. Protect and conserve the literature resources of the Center.

Title	Grade	Name	Time
Editorial Assistant	GS-5	Mabel Bennet	100%
Librarian Technician	GS-6	Helen Lang	100%

1. Task Number
MA-50-74

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33000		Technical Services

5. Div.
Middle Atlantic Coastal Fisheries Center

6. Task Title
Automatic Data Processing

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	31.5	34.0
8. Contract Services	2.0	12.1
9. Major Equipment		
10. Boats and Facilities		
11. All Other Direct Classes	.3	.3
12. TOTAL DIRECT COST	33.9	46.4
13. Administrative Support		
14. Technical Services		
15. TOTAL TASK COST		
16. Positions, Permanent	2	2
17. Positions, Other	2	2
18. Man-Years, Permanent	2.0	2.0
19. Man-Years, Other	1.6	1.6

21. Approved
Carl Shuckman

22. Date
March 30, 1973

20. Description:

This Unit, servicing all Center components at all facilities, is responsible for (1) consultation, advice and assistance to all units with respect to design and selection of appropriate data management, analysis and reduction systems, (2) for furnishing, on a timely basis, all card punching and verifying services, (3) for preparing all data for computer runs, and (4) for technical advice and guidance in interpretation of completed runs. It is expected that (1) a minimum of 20K cards will be punched and verified in fiscal '74, (2) that an existing backlog of uncarded data (estimated at an additional 20K cards) will be eliminated during fiscal '74 through contract card-punching, and (3) that a standardized, multidisciplinary environmental data bank for the Middle Atlantic Bight will be established and operational by the end of fiscal '74. Computer facilities at Fort Monmouth, at this time, are available to us free of charge.

Card-punching has been the bottleneck for this Unit since its services were expanded to include all Center facilities. The proposed small contract would effectively triple the output of the Unit. It is anticipated that future fiscal years would require larger card-punch machine, (2) a verifier machine and (3) a card-sorting machine - either on long-term loan or by transfer of title.

Title	Grade	Name	Time
Physical Science Technician	GS-9	Charles Morrison	100%
Computer Aid	GS-4	Catherine Noonan	100%
Clerk-typist	GS-3	SuEllen Steimle	100%

FY 1974 ABBREVIATED TASK DEVELOPMENT PLAN

281715

2. Orgn. Code	3. Rank	4. Mgmt. Category
F33001		Technical Service

5. Div.
Middle Atlantic Coastal Fisheries Center

6. Task Title

R/V Delaware II

OBJECT CLASS	FY 1973	FY 1974
7. Total Labor	120.0	
8. Contract Services		
9. Major Equipment	2.4	
10. Boats and Facilities		
11. All Other Direct Classes	62.6	
12. TOTAL DIRECT COST	185.0	
13. Administrative Support	18.4	
14. Technical Services		
15. TOTAL TASK COST	203.4	
16. Positions, Permanent	7	
17. Positions, Other	5	
18. Man-Years, Permanent	7.0	
19. Man-Years, Other	4.5	

21. Approved John Holston

22. Date

20. Description:

This TDP was terminated as of January 1, 1973 when control of vessel and of available operating funds were transfered to NOS