# A STUDY OF THE RESEARCH ACTIVITIES OF THE DEPARTMENT OF MARINE RESOURCES:

# THE FIVE YEAR RESEARCH PLAN

FINAL REPORT

OF THE

JOINT SELECT COMMITTEE

ON

MARINE RESEARCH

February 13, 1979

STATE OF MAINE
OFFICE OF LEGISLATIVE ASSISTANTS
STATE HOUSE
AUGUSTA, MAINE 04333

February 13, 1979

Senator Richard Pierce
Chairman
Legislative Council
State House
Augusta, Maine 04333

Dear Senator Pierce:

In accordance with H.P. 1792, an Order directing a Joint Select Committee on Marine Research to study marine research, I enclose the final report of the Committee.

Sincerely,

Spencer Fuller (JcH)
Spencer Fuller
Chairman

enclosure
SF/JH/sym

# REPORT OF THE SELECT COMMITTEE ON MARINE RESEARCH

## INTRODUCTION

Study Order H.P. 1792 ordered the formation of a Select Committee to study marine research conducted by the Department of Marine Resources and to advise the Department on the development of a plan for departmental research over the next five years. The Study Order was passed by the First Regular Session of the 108th Legislature. The following members were appointed in July of 1978:

Spencer Fuller, Chairman, Industry member

Ed Blackmore, Industry member

Senate John Chapman, Senate member

Professor John Commito, Scientific member

Representative Lawrence Greenlaw, House member

Ronald Lawrence, Industry member

Norman H. Olsen, Jr., Industry member

Representative Bonnie Post, House member

George D. Richardson, Jr., Industry member

The Committee was ordered to consider and report on the following issues:

1. The research required to implement the 200-mile limit (the Fisheries Conservation and Management Act of 1976, P.L. 94-265, FCMA); and needed to protect the State's interests in implementation of that Act;

2. The marine resources and hazards that are or may be important to the State's fisheries;

3. The research that is necessary over the 5-year period of 1979 to 1984;

4. The specific goals of that research;

5. The procedures for periodic review and oversight of that research; and

6. The procedures required to review the plan and its goals after its adoption.

The Committee met several times during the fall of 1978 to carry out its study. The Department presented to the Committee information on the fisheries resources of the State, the status of the State's marine resources and their probable changes in the future, and proposals for research over the next five years. The Committee reviewed and discussed this information with the Department, and approved a research plan, as well as making other recommendations.

REPORT

Status of Resources.

Though the present trend in the State's fishing industry seems to be toward long term economic improvement, there are some contrary indications as well. The Maine landings of finfish have increased significantly during the implementation of the new 200 mile limit: from 63,000 metric tons in 1975 to over 83,000 metric tons in 1978. The cod catch along the Maine coast has doubled from 1976 to 1977, and american plaice (dab) catches have doubled every year since 1975. Catches of pollock and species of hake have increased steadily, as have catches of grey sole, swordfish and mussels. These last species have now reached record catch levels. However, other species, particularly species that are very important to the Maine industry, have had decreasing

landing. Catches of shrimp, ocean perch (redfish) and blood worms have declined significantly over the same period. (See Appendix I.)

The landings data, however, are not direct indicators of the abundance of the resouces. The increase in the industry's fishing effort, due primarily to the enactment of the 200-mile limit and the increasing demand for seafood, has increased the landings. But this increased effort and increased fishing mortality, may have overly stressed some stocks. The information available on stock abundance on most commercially valuable stocks in the Gulf of Maine is insufficient to know the exact effect of this increased mortality. Enough information is available to indicate that some stocks are being overfished, particularly the stocks most valuable to the Maine industry. The information available also indicates that other stocks are relatively abundant. (See Appendix I.)

The lack of detailed information on stock abundance in the Gulf of Maine not only makes difficult a general assessment of the status of the fishing resources, it imposes increasing difficulties in effective management of these resources. Under the FCMA, management responsibility in the Federal fisheries zone is delegated to the New England Regional Fisheries Management Council. In fulfilling this responsibility, the Regional Council has access to a great deal of data concerning resource stocks. However, because of the wide geographical area of its responsibilities, most of this information is gathered on a geographic scale that is inappropriate for use by the State. For example, in establishing the first management plan for cod, the Regional Council used catch, effort and survey data for the entire Conservation Zone from Cape Hatteras to Nova Scotia. However, there

were no biological samples from Maine waters included in this data.

This creates two problems. First, because detailed information on the status of stocks within the State's jurisdiction is not comprehensive, the State has difficulties in protecting the interests of its industry before the Regional Council. Secondly, the same lack of information seriously handicaps the State in regulating its own fisheries. Though the State has managed its fisheries for a long time on this incomplete information, the changing nature of Federal and State management will no longer allow such management. Information on stock levels and the dynamics of the resources will become increasing important in the future. Under the FCMA, management has become much more dependent on sophisticated research and must, by law, be based on the best available scientific information. Without this information, the State will not be able to adequately manage its own resources, nor protect its industry's position under the Federal management program.

The information required to identify and understand potential hazards to the State's fishing industry is also inadequate to meet the increasing demand. The most important hazards to the fisheries include environmental alterations, such as dredging, spoil sites, hydroelectric redevelopment and altering wetlands; pollutions, such as sewerage outfalls, heavy metals contamination, oil spills and pesticides, paralytic shellfish poisoning (Red Tide); fish and shellfish diseases; and environmental assessment for site selection for industrial development. Though the Department's research has considered these hazards in the past, the increasing value of its fisheries will place more pressure on the State's resources.

Research Plan.

The general goal of the Department's research activites should be to develop data and analysis techniques that will allow responsible management of the State's fisheries resources. To accomplish this goal, the Department needs a clear legislative mandate for research, a specific and detailed research plan to direct its activities, and the necessary money and manpower to carry out that plan. In addition, the Department should have systematic methods of reviewing the quality of its research and for updating its research plan. In order to take full advantage of marine research presently being conducted in the State, the coordination among various marine research activities by the State and private groups needs to be vastly improved. Finally, more consideration should be given to certain specific problems that were not resolved in this study.

To provide research by the Department that will allow responsible management of the State's fisheries resources, the Committee makes the following recommendations:

1. RECOMMENDATION: The Department's legislative authorization for research activities should be rewritten to clearly reflect their responsibilities.

The present legislative authorization for marine research is contained in 12 MRSA §6052. Though it provides some direction for departmental research, it does not provide sufficient policy guidance for the Department. Thus, it should be rewritten to specifically establish the major area of research, and its basic purposes. (Draft legislation is in Appendix II.)

2. RECOMMENDATION: The Department's proposed Research Plan, and accompanying budget, is approved. The Part II budget request for 1980-81, which is necessary to implement this plan, should be approved.

The Department, with the advice of the Committee, has developed a detailed and specific Research Plan for 1979-1982. (See Appendix III.) The Plan establishes a general priority for marine research, and sets specific goals and objectives for implementation in each year.

Though the Study Order called for a Plan for 5 years, from 1979 to 1984, the Committee approved this shorter planning period for its study. The possible plans for research for 1983 and 1984 were discussed with the Department. However, because of the nature of the State's budgeting process and the uncertainty of Federal funds and State need in that period, the Committee chose to make no specific recommendations for the Plan for those years. The Plan should cover a 5-year period, but is presently left for development by the Department with the ongoing research review process. The Committee expects and supports the continued development of the Department's research activities after 1982, in a direction and to the extent warranted by the need for information to properly manage the resource and protect the interests of Maine's fishing industry.

Prior to implementing the new Research Plan, the Department has proposed a complete reorganization of its Bureau of Marine Research. Currently, the Bureau is organized primarily along "species" lines, with researchers working on various aspects of one or several related species. The Department proposed to re-

organize the Bureau along "functional" lines, with researchers focusing on particular scientific functions of all species. Hopefully, this reorganization will provide a flexibility in research, as well as greater efficiency. As the Plan is implemented, the organization will be refined into a more sophisticated structure that will account for both "species" and "functional" specializations. This reoganization appears necessary to fully utilize the skills and knowledge of Department personnel within a flexible organization structure. It will allow the Department to continue its present research programs, while broadening its capacity to undertake other important research.

The Research Plan, which is based on this reorganization, is presented in detail in Appendix III. It provides for a significant expansion of marine research, and a basic reorientation of research policy. The research of the Department has traditionally been oriented toward localized problems which have existed for many years along the Maine coast. The Department's rsearch on clams, for example, has focused on providing information on clam beds so that municipalities could manage the clam resource. Worm research has been mostly life history and basic biological research that has not been notably helpful in management of the resource. The Department has never had a basic program of researching the status of the State's stocks, or of developing the basic information on mortality that is critical to any management program. It has never had a finfish research program. Much of the research that has been undertaken that was directly forcused on management, has mostly been under contract with the Federal government. The establishment of the priority

and the long range policy of research has been primarily dictated by immediate demands or by the interests of particular funding sources.

The Research Plan establishes a basic policy of emphasizing and developing research that is of direct and immediate use in the development of management plans. The key element in the Plan is the development of a complete assessment capacity in the Bureau. This assessment capacity will allow the Department to sample and then estimate the size of the stocks and levels of abundance. It will also provide estimates, in some cases first estimates, of mortality rates on these stocks, and the levels of catch and effort on each important species. From this information, knowledge of the effect of fishing can be obtained, and then the Department can recommend measures that can be taken to minimize any economic damage to the industry that can occur if the stocks decline. This will also give the Department the information that is necessary to protect Maine fishermen from arbitrary or unfounded decisions by the Regional Council. Supporting personnel for this new assessment focus are also included in the Plan.

The Plan also includes strengthening of other parts of the Department's research activities. The research relating to environmental alterations and pollution needs more support. The increasing development pressure in the State has increased the demand for more information on its effects along the coast. And the increased Federal and State water quality standards have created a demand for information about Maine's coastal waters and

the effect of degradation. The problem of paralytic shellfish poisoning has become more acute, not because of an increase in incidence, but because the increased value of clams has made it more economically damaging to close beds. Thus, an ability to open or close flats more efficiently, and a better understanding of the poisoning will provide significant dividends. The increased value of shellfish also makes much more important the ability to comply with the Federal Certification Program, which governs interstate shipment of shellfish. The Plan includes strengthening of all these programs.

The research on the life history and distribution of economically important species will be continued under the Plan; but will be expanded to include more comprehensive coverage. There will be strong efforts made to gather all data currently available on both the State and Federal level. To make this information accessible, computer technology is included in the Plan. There is a great deal of information available that the Department does not have access to because of insufficient computer hardware. Computers will also vastly improve the efficiency of the scientific research undertaken by the Department.

Though the Plan does not contain a provision for establishing Regional Centers, the Part II Budget Request contains funding for them. Regional Centers are centers for department activities located along the coast. They are intended to provide a base and focus for all department activities, and thus the Committee suggested that they not be placed under the Bureau of Marine

Research, but under the Bureau of Administration. The Committee believes these centers are critical for the improvement of all department operations. For the Bureau of Marine Research they will provide a local base of operations when field studies are underway. They will also provide a focus for industry members that will improve communications and responsiveness of the Department.

The cost for the expansion of Department activities contained in the Research Plan is substantial. The Part II Budget Request asks for an additional $712,091 in 1980, and $845,398 in 1981 in General Fund appropriations. (See Appendix IV.) However, this is a very reasonable amount in view of the value of the fisheries resources and the great need for research. Maine's marine resources play a more important role in its economy than in almost any other state on the eastern seaboard. The percentage of Maine's people employed in the fishing industry is six times greater than Massachusetts', Maryland's, North Carolina's, or Florida's. Yet Maine spends less per capita on research than most coastal states. Except for Connecticut and Delaware (for which information is not available), all the states from New Hampshire to South Caroline spend on the average 7.6% of the annual landed value on research. This State spent 1.6%, approximately one million dollars, on its research last year, and half of that was Federal money. Even with the increase proposed under this Research Plan, the State will only be spending 2.3% of the landed value on research.

This money will be well spent. It is a critical investment in a growing industry which is based on the natural resources of the State. With solid scientific information on the fisheries resource, the State will be capable of managing the resource to secure the highest sustained economic yield. It can develop the fisheries and stabilize, to the greatest extent possible, the production and economic return. With better knowledge of the dynamics of the resource, disastrous over fishing and a collapse of a major segment of the industry, may be avoided, or at least cushioned. This can avoid the serious economic disruption that results from an unanticipated collapse of a stock. Avoiding this disruption means a direct economic gain to the State. If the shrimp stock had not collapsed in 1974, millions of dollars would have been added to the economy and a processing capacity would not have been lost.

More and better quality information can also preserve and enhance the State's position under Federal management plans. Without that information, Maine fishermen face the prospect of being forced out of traditional fishing species and areas, or of being unable to take advantage of new opportunities. With that information Maine's representatives on the Regional Council can insure fair consideration of the State's interests. This can in turn aid in the revival of major fishing fleets in Maine, and provide an attractive base for the development of the processing sector. Thus, the investment is sound and necessary. It should improve the economic stability and future growth of an important industry. This, in turn, will generate an improvement in the entire State's economy.

3. RECOMMENDATION: The Marine Resources Advisory Council should have oversight authority of the Research Plan and its implementation.

In order for the Research Plan to be effectively implemented, it will need continuous oversight. As the basic premise of this Plan is to improve research to enable better management of the resource, the industry should also have an important role to play in the oversight. The present Marine Resources Advisory Council, composed of industry representatives, already has an important advisory function to the Department and is well versed in department activities. Thus, it seems appropriate to give it an oversight authority on the Research Plan. In order to improve the Council's ability to assess the Plan and the research that implements it, it should have scientific advice from impartial marine scientists. The Council will also be responsible for reviewing the annual extension and updating of the Plan, so that it will continually reflect the changing management situation and the anticipated need for new information. After completing the annual review and revision of the Plan, it will be sent to the Legislature, along with any comments or recommendations by the Advisory Council. (Draft legislation in Appendix V.)

This process will insure an adequate review of the implementation of the Plan, and its timely revision. It will also allow various segments of the industry to comment on the Plan, and to have some role in developing the Department's research policy. As the Advisory Council already has an important role in advising the Department on its other activities, the Council will be effective in assisting the development of the general

management goals and perspectives that underlie the Research Plan. They will also increase the communications between the Bureau of Marine Research and the industry.

4. RECOMMENDATION: The Commissioner of Marine Resources should develop and implement a system of regular peer review of research by the Department.

Presently, there appears to be little review and assessment of the quality of the research being done by the Department. Though some research results are published in scientific journals, which provide an opportunity for review, most are not. As the research of the Department is focused on immediate needs for information for management, much of it is not appropriate for publication in scientific journals. However, there is still a need for an assessment of the quality of research. Review by scientific peers meets two basic needs of departmental research. First, it provides assurance that the information on which management plans are to be based is reasonably sound and valid. But more importantly, awareness that the results of research are to be reviewed by scientific peers improves the quality of the research. As it is difficult for laymen to assess the quality of scientific research, and it is inappropriate to have co-workers assess performance, peer review by the outside scientific community is essential. A well established system of peer review will also enhance the credibility of the Department's research. This enhanced credibility will improve the Department's application of research results to management decisions. Thus, an effective method of peer review hould be immediately instituted.

5. RECOMMENDATION: The salary levels and personnel status of research scientists in the Department should be reviewed, particularly in relation to those of other states and other research institutions in this State.

As part of this study, the Committee reviewed the salary levels of research scientists in the Department. Marine scientists are presently in great demand, especially fisheries biologists with experience in management-related areas such as stock assessment. The increased Federal research effort resulting from the 200-mile limit, and increased State activities have placed a premium on these research skills. The salaries paid to the Department's scientists appear to be too low to attract and retain the first class research scientists that the State needs to implement its research and management plans. This seems particularly true because the Department is facing not only competition from governmental agencies seeking these scientists, but from the private sector as well.

In addition, the Department's research scientists are in the Classified Service. The Committee is concerned that as professionals working with a great deal of independence in specialized fields, that it might be inappropriate to have them classified. Classified service also enormously restricts the flexibility of the Department in redirecting its research effort into new areas. It may have a direct bearing on the levels of performance as well. It would seem appropriate to consider unclassifying all research scientists in the Department.

Because of the lack of time the Committee did not consider these issues. However, it feels that they are important to the effectiveness and efficiency of the Department's research activities. Thus, the Committee feels that these issues should be studied further. (Study Order attached as Appendix VI.)

6. RECOMMENDATION: The coordination of marine research among various state agencies and with private research activities should be studied further.

The Department of Marine Resources is only one marine research group among many in the State. Both the Department of Conservation, various vocational institutes, and the University have marine scientists conducting research. There is also a private laboratory, the Bigelow Laboratory for Ocean Sciences, entirely devoted to marine research. In addition there are numberous marine research stations and laboratories located along the coast. While most of the work at these various laboratories is quite distinct and does not duplicate the work done by the Department, it is nonetheless important to develop coordination and cooperation among them. Because of their varied activities and their different sources of policy direction and funds, there is presently no single agency or mechanism to develop coordination and cooperation. The one attempt to develop interaction, The Research Institute of the Gulf of Maine (TRIGOM) has apparently been ineffective in this aspect of its purposes. In order to fully mobilize the talent and knowledge on marine research available in the State, there should be better coordi-

nation and cooperation. Thus, the Committee feels that further study of this problem is warranted.

The Committee believes that a meeting of the various marine research organizations with industry representatives, to discuss present research programs and plans, would be a good first step. This discussion would develop a clearer understanding of research presently underway in the State, and might also make clearer the industry's perceptions of its needs. Beyond this, the Committee recommends that there be further study of the marine research presently being conducted, and of ways to improve coordination and cooperation among the numerous research agencies or institutions. (Study Order attached as Appendix VIII.)

## CONCLUSION

The Committee has thoroughly reviewed the marine research activities of the Department of Marine Resources. Though these activities in the past may have been adequate to meet the needs of the State in managing its resources, this is no longer true. The advent of the 200-mile limit and the increasing importance of the fishing industry in the State's economy, requires a significant increase in State research activity. The Research Plan developed by the Department, with its increased expenditures and associated improvements in research, will meet this increased demand for information. With the information derived from this broadened research effort, it is likely that better management of Maine's fisheries will result. From improved management will flow an improvement in the economic position of Maine's fishing industry.

Thus, the increased research expenditures should directly improve the harvesting of one of the State's most important natural resources.

Appendices:

I. Status of resources

Landings and stock status

II. Draft legislation (Research authorization)

III. Research Plan

IV. Budget request

V. Draft legislation (Oversight)

VI. Draft Study Order (Personnel)

VII. Draft Study Order (Coordination of research)

VIII. Study Order

# APPENDIX I:

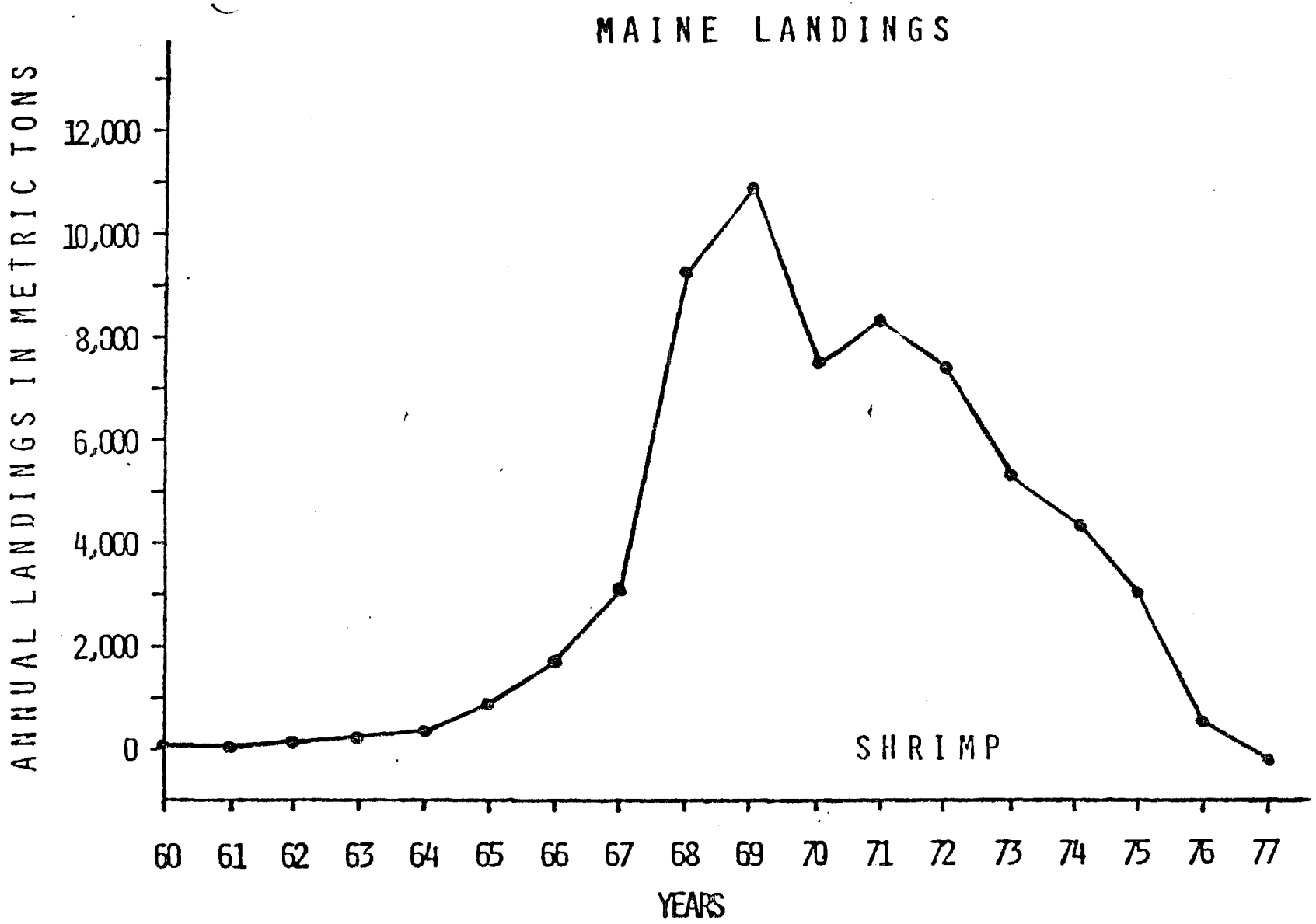
# STATUS OF RESOURCES

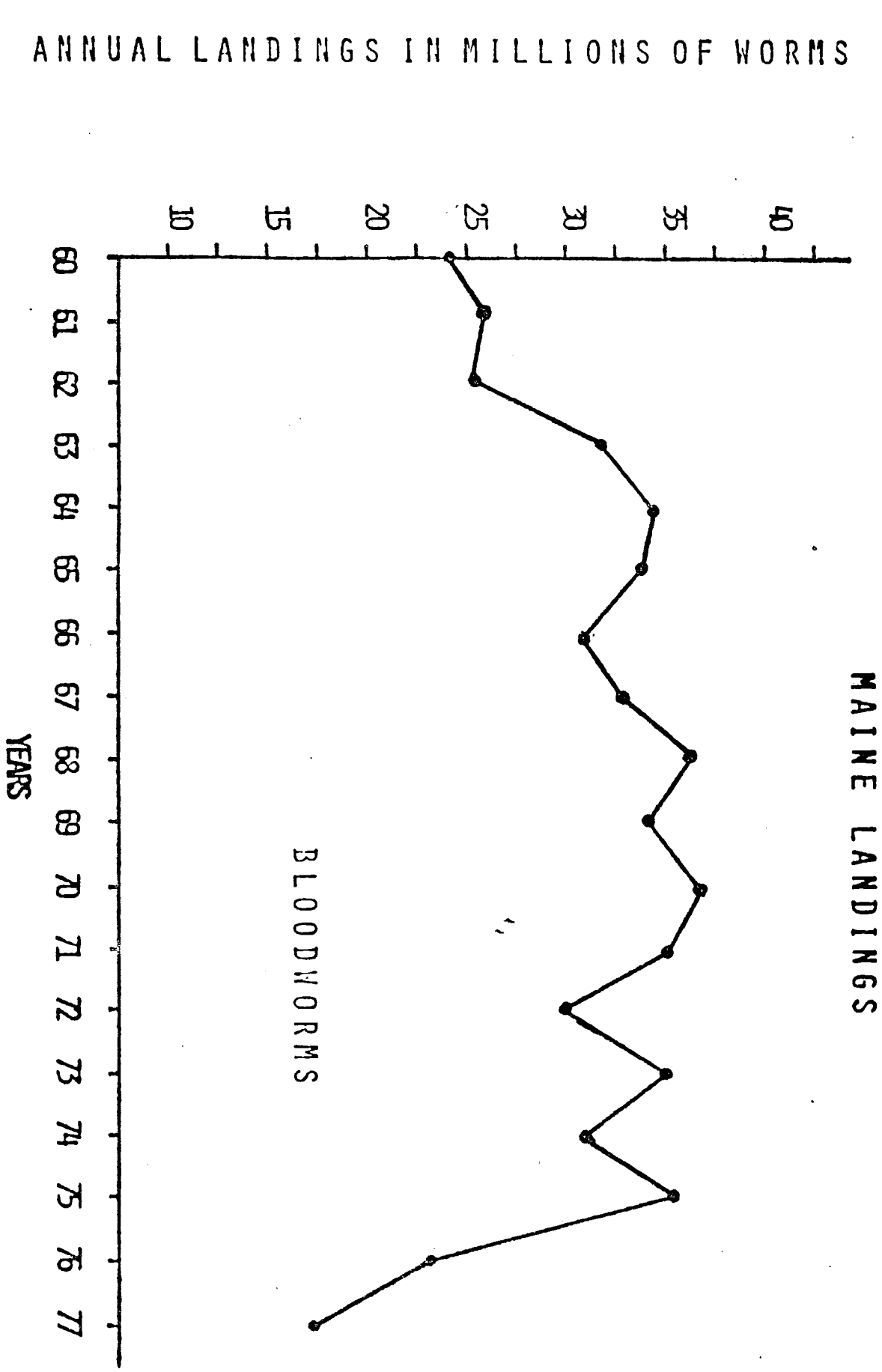
# LANDINGS AND STOCK STATUS

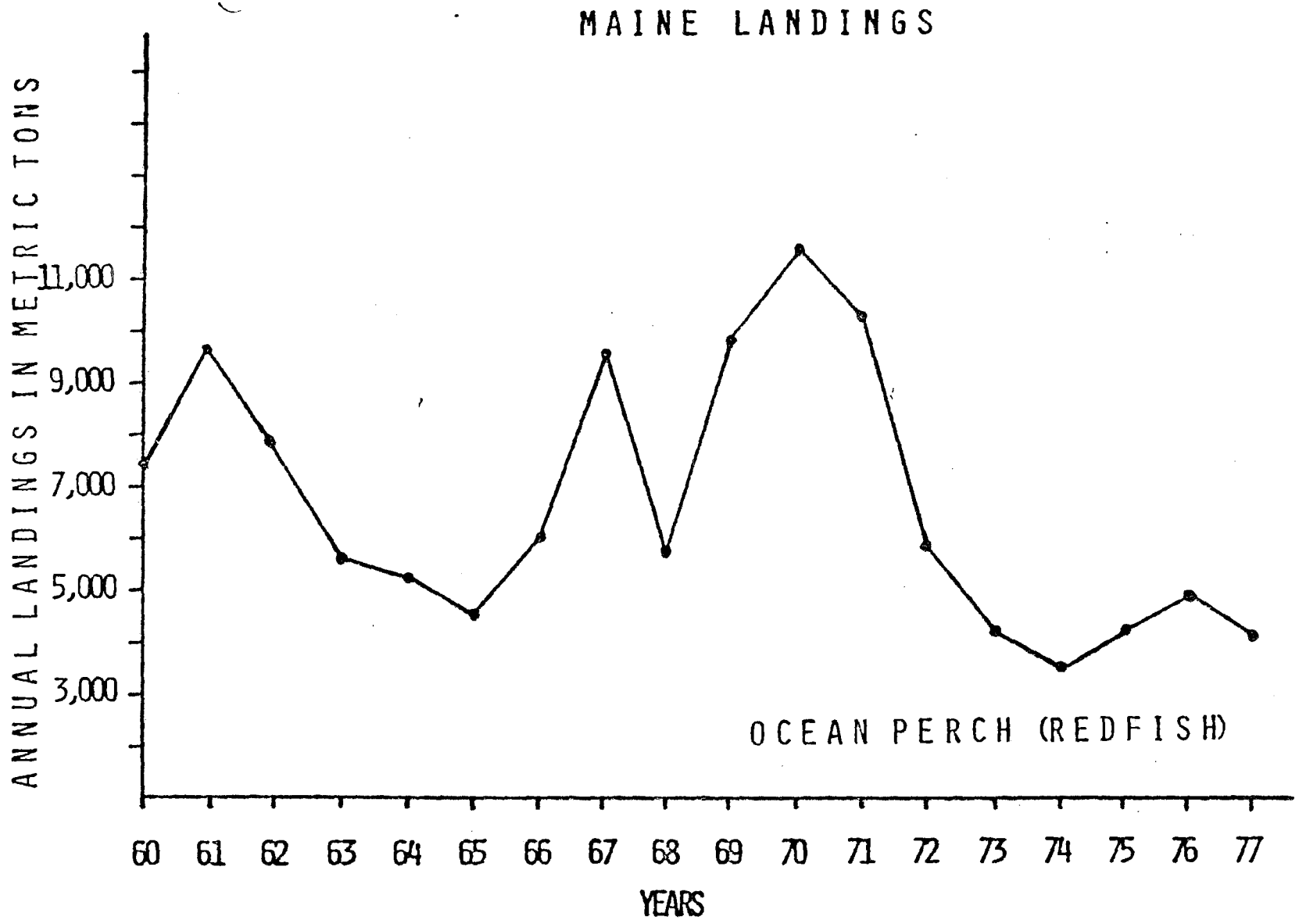
1977 MAINE LANDINGS WORTH MORE THAN $100,000.
Species ordered be descending value with weight and price per pound rankings.

| Species | Rank | Thousands of Dollars | Rank | Thousands of Pounds | Rank | Cents per Pound |
|---|---|---|---|---|---|---|
| Lobsters | 1 | 32,101 | 3 | 18,488 | 3 | 173.6 |
| Clams | 2 | 9,272 | 6 | 7,835 | 7 | 118.3 |
| Herring | 3 | 3,545 | 1 | 73,050 | 23 | 4.9 |
| Ocean Perch | 4 | 3,140 | 2 | 20,801 | 18 | 15.1 |
| Cod | 5 | 1,974 | 5 | 9,126 | 16 | 21.6 |
| Dab (Amer. Plaice) | 6 | 1,765 | 8 | 5,813 | 14 | 30.4 |
| Pollock | 7 | 1,406 | 4 | 10,685 | 19 | 13.2 |
| Bloodworms | 8 | 1,314 | (17.5 million worms @ = 7.5¢ ea.) | | | |
| Sandworms | 9 | 1,000 | (29.5 million worms @ = 3.4¢ ea.) | | | |
| Haddock | 10 | 960 | 10 | 2,249 | 10 | 42.7 |
| Gray Sole | 11 | 847 | 13 | 1,692 | 9 | 50.1 |
| Scallop (Sea) | 12 | 755 | 20 | 395 | 2 | 191.2 |
| Hake (Red & White) | 13 | 744 | 7 | 6,600 | 20 | 11.3 |
| Mussels | 14 | 680 | 11 | 2,113 | 13 | 32.2 |
| Swordfish | 15 | 460 | 21 | 380 | 6 | 120.9 |
| Eels | 16 | 263 | 24 | 176 | 4 | 149.4 |
| Anglerfish | 17 | 172 | 17 | 468 | 12 | 36.7 |
| Shrimp | 18 | 172 | 23 | 313 | 8 | 55.1 |
| Cusk | 19 | 163 | 15 | 1,000 | 17 | 16.3 |
| Rock Crabs | 20 | 142 | 14 | 1,433 | 21 | 9.9 |
| Yellowtail | 21 | 133 | 22 | 332 | 11 | 40.1 |
| Blackback | 22 | 124 | 18 | 428 | 15 | 29.0 |
| Alewives | 23 | 120 | 9 | 3,374 | 24 | 3.6 |
| Irish Moss | 24 | 109 | 12 | 2,069 | 22 | 5.3 |
| Total (1-24) | | 61,361 - 99% of | | 169,955 - 93% of | | |
| All 77 Landings | | 62,000 | total | 182,177 | total 77 Landed Weight | |

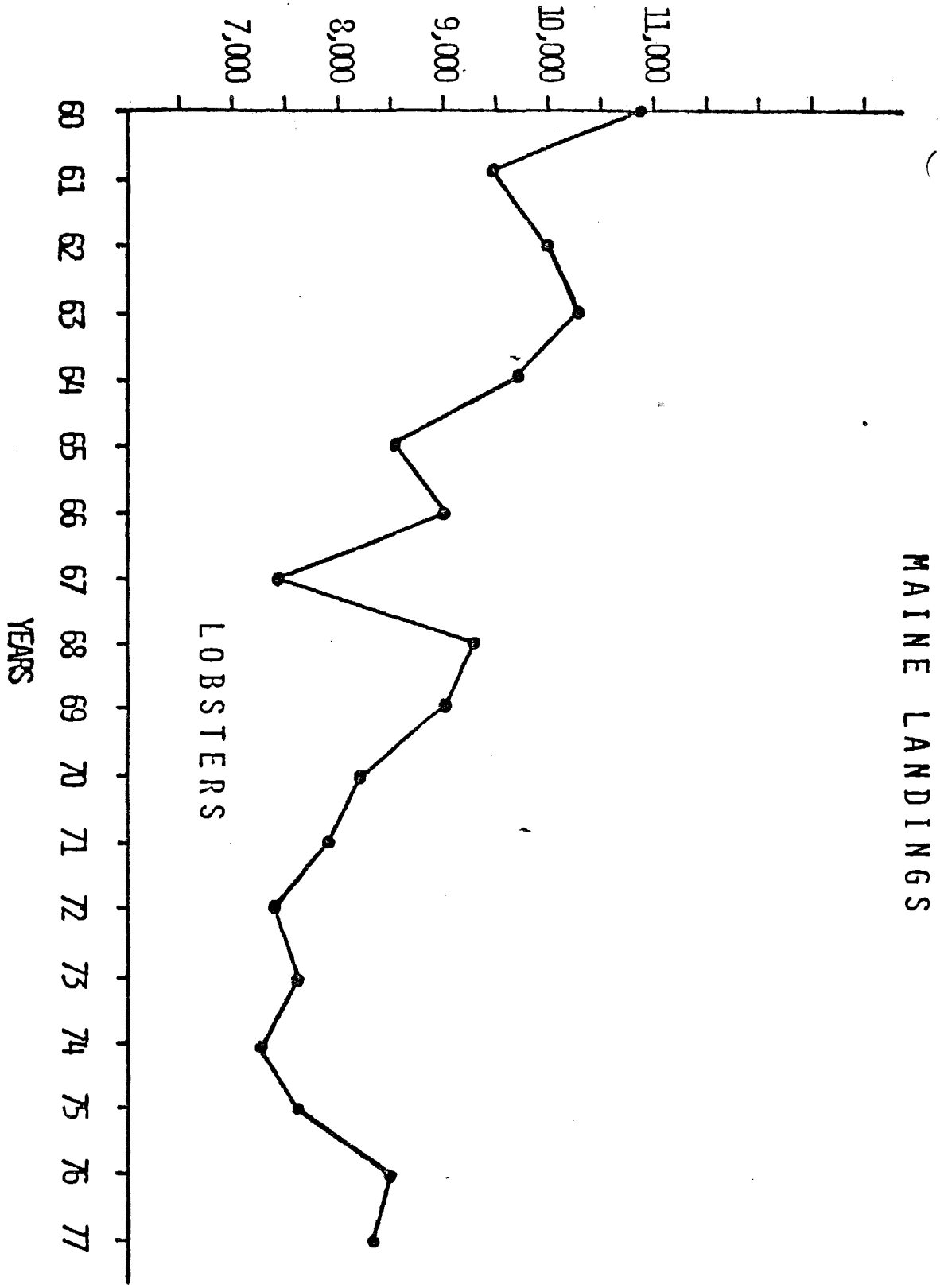
Tables compiled by DMR from Preliminary Data Released by DMR and the National Marine Fisheries Service

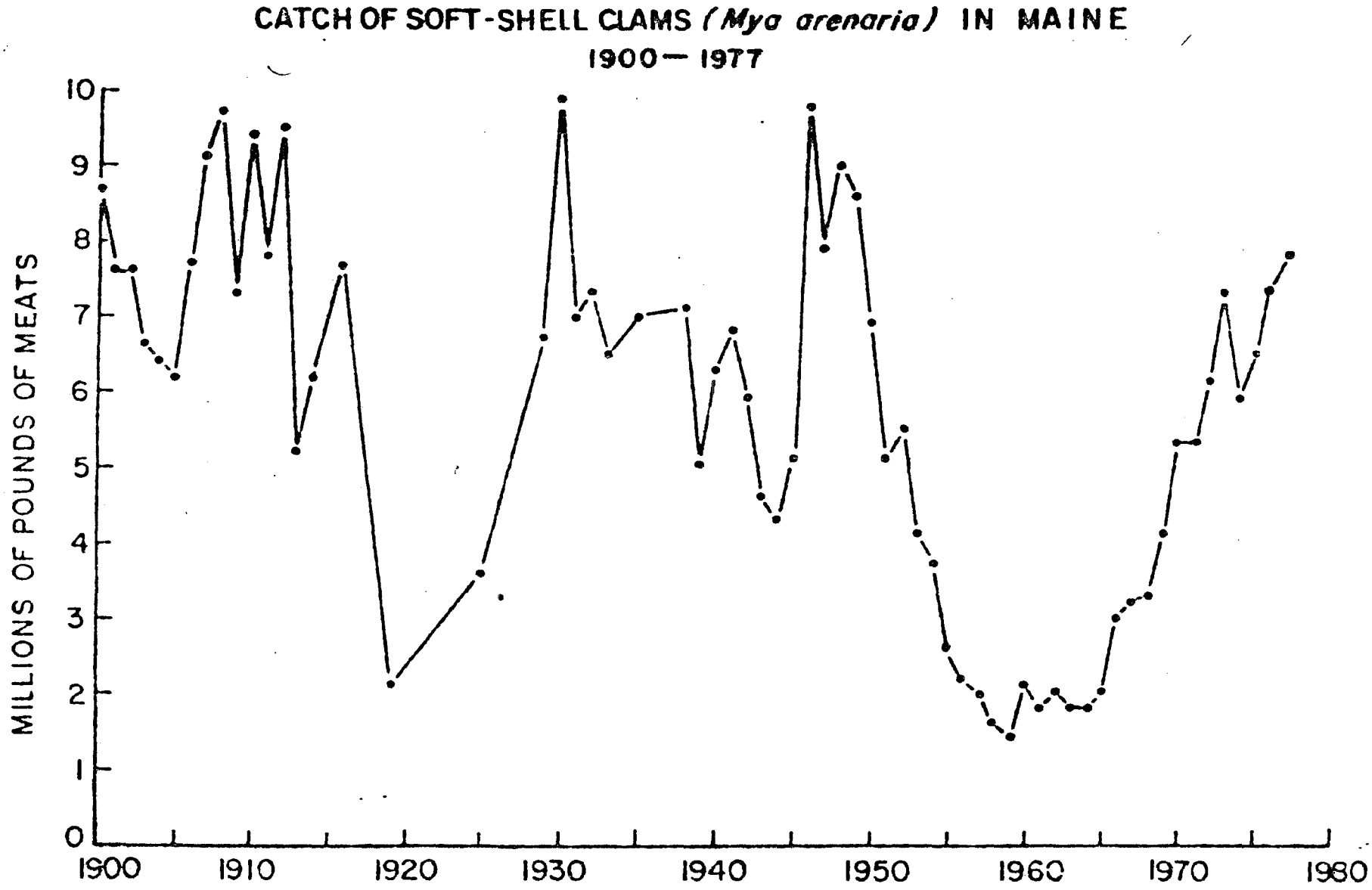

MAINE LANDINGS
ANNUAL LANDINGS IN METRIC TONS
12,000
10,000
8,000
6,000
4,000
2,000
0
SHRIMP
60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77
YEARS

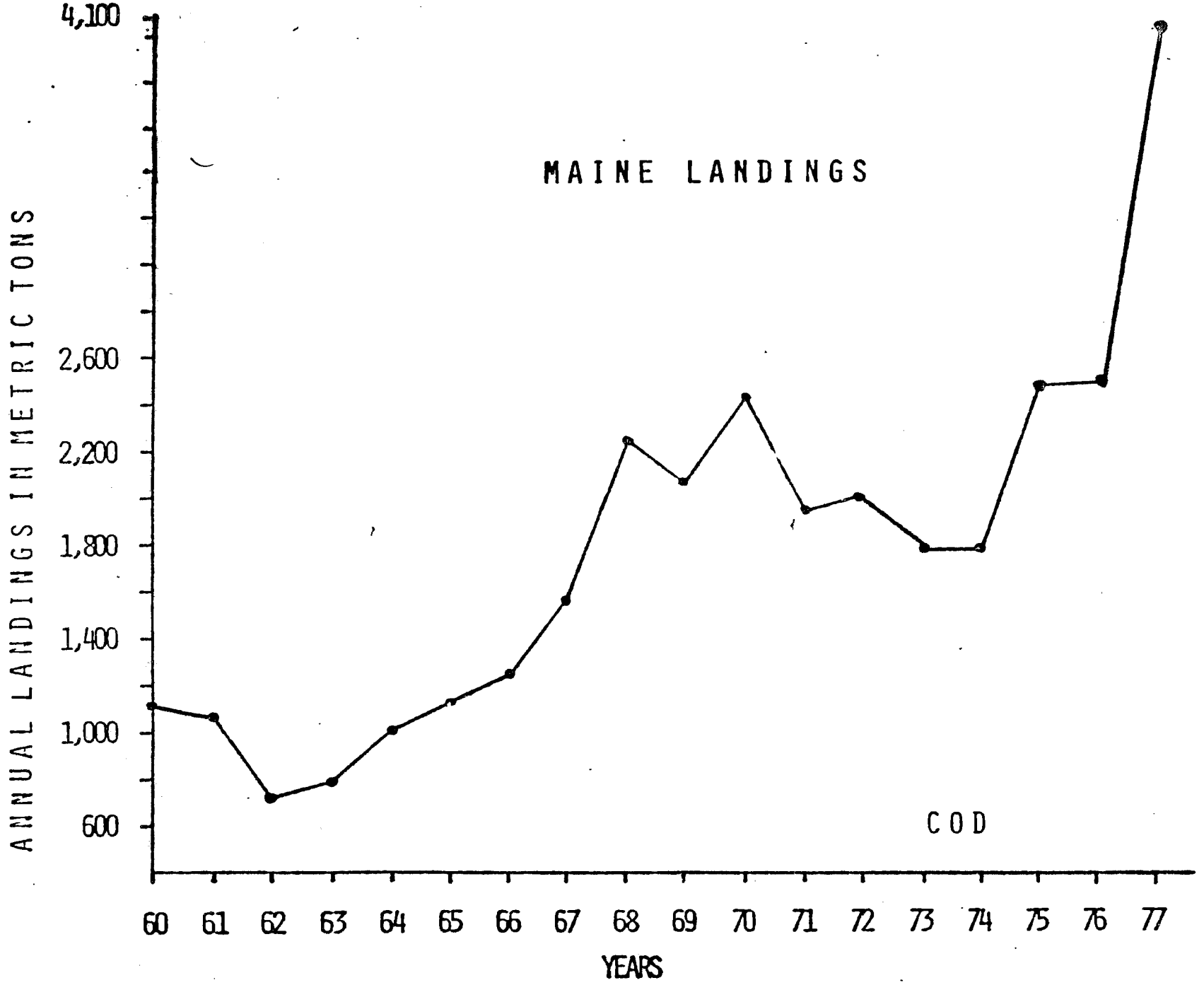

ANNUAL LANDINGS IN MILLIONS OF WORMS
10
15
20
25
30
35
40
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
YEARS
BLOODWORMS
MAINE LANDINGS

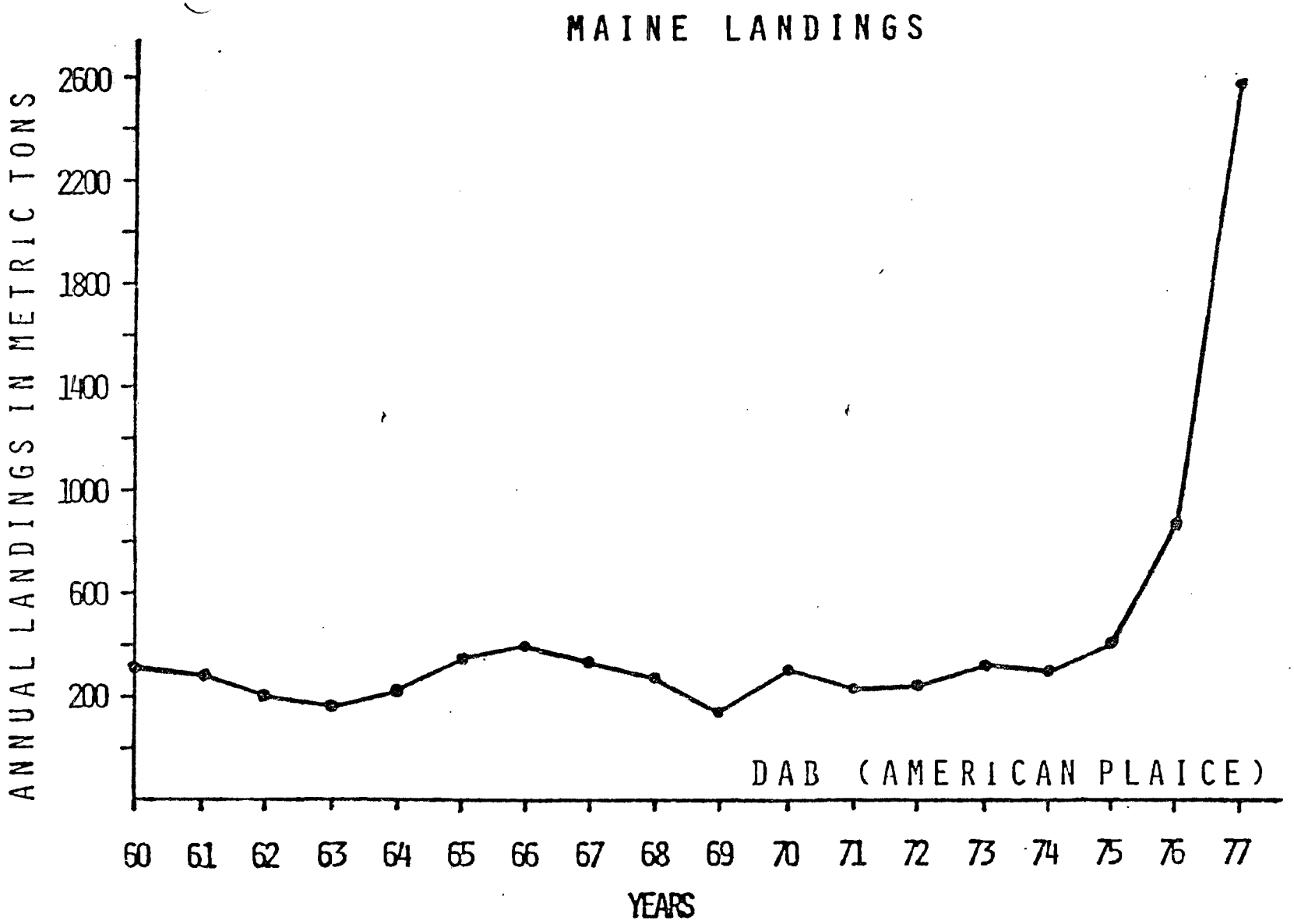

MAINE LANDINGS
ANNUAL LANDINGS IN METRIC TONS
11,000
9,000
7,000
5,000
3,000
OCEAN PERCH (REDFISH)
60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77
YEARS

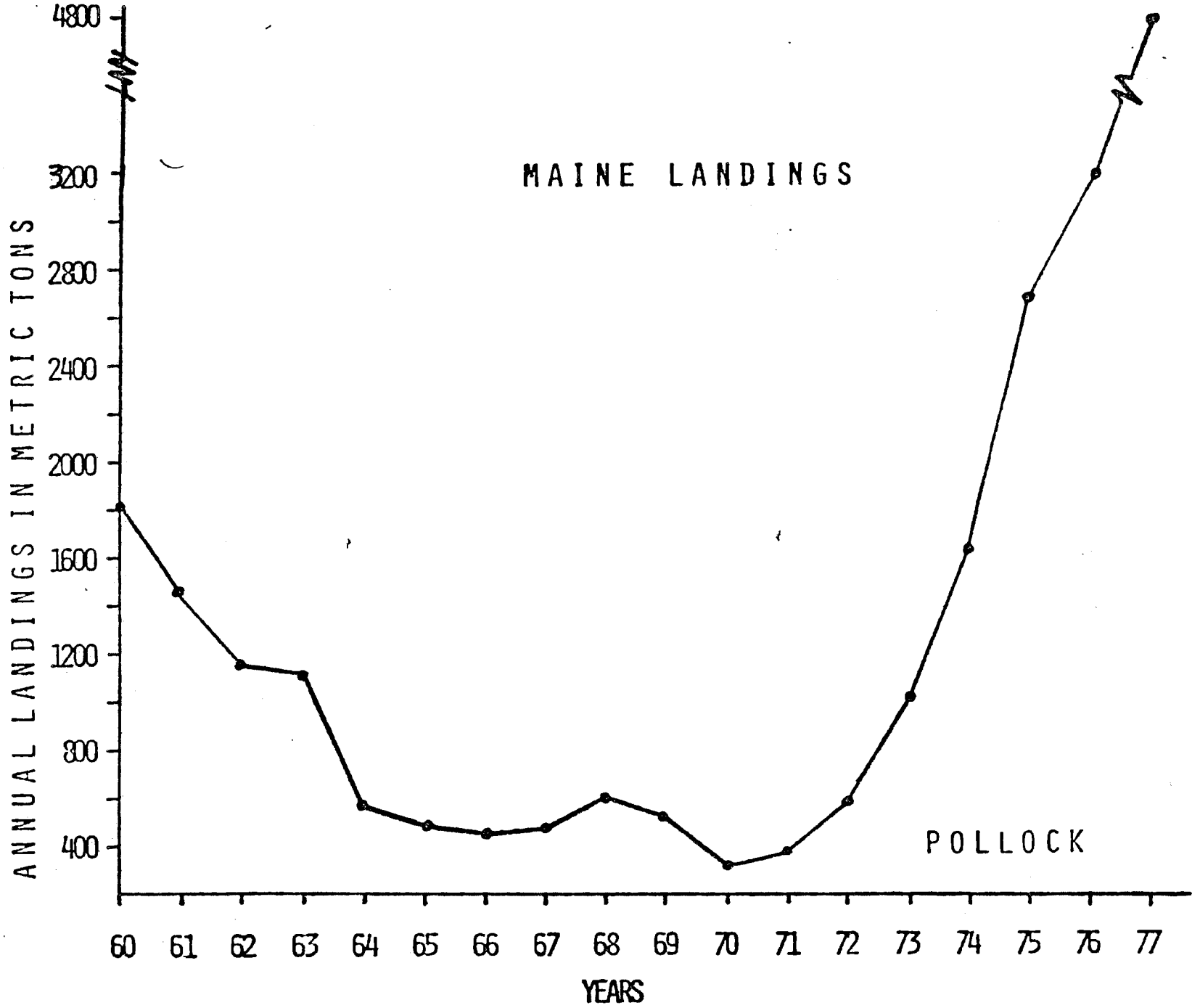
ANNUAL LANDINGS IN METRIC TONS




CATCH OF SOFT-SHELL CLAMS (Mya arenaria) IN MAINE
1900 — 1977
MILLIONS OF POUNDS OF MEATS
0
1
2
3
4
5
6
7
8
9
10
1900
1910
1920
1930
1940
1950
1960
1970
1980


MAINE LANDINGS
ANNUAL LANDINGS IN METRIC TONS
4,100
2,600
2,200
1,800
1,400
1,000
600
COD
60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77
YEARS


MAINE LANDINGS
ANNUAL LANDINGS IN METRIC TONS
2600
2200
1800
1400
1000
600
200
DAB (AMERICAN PLAICE)
60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77
YEARS


MAINE LANDINGS
ANNUAL LANDINGS IN METRIC TONS
4800
3200
2800
2400
2000
1600
1200
800
400
60
61
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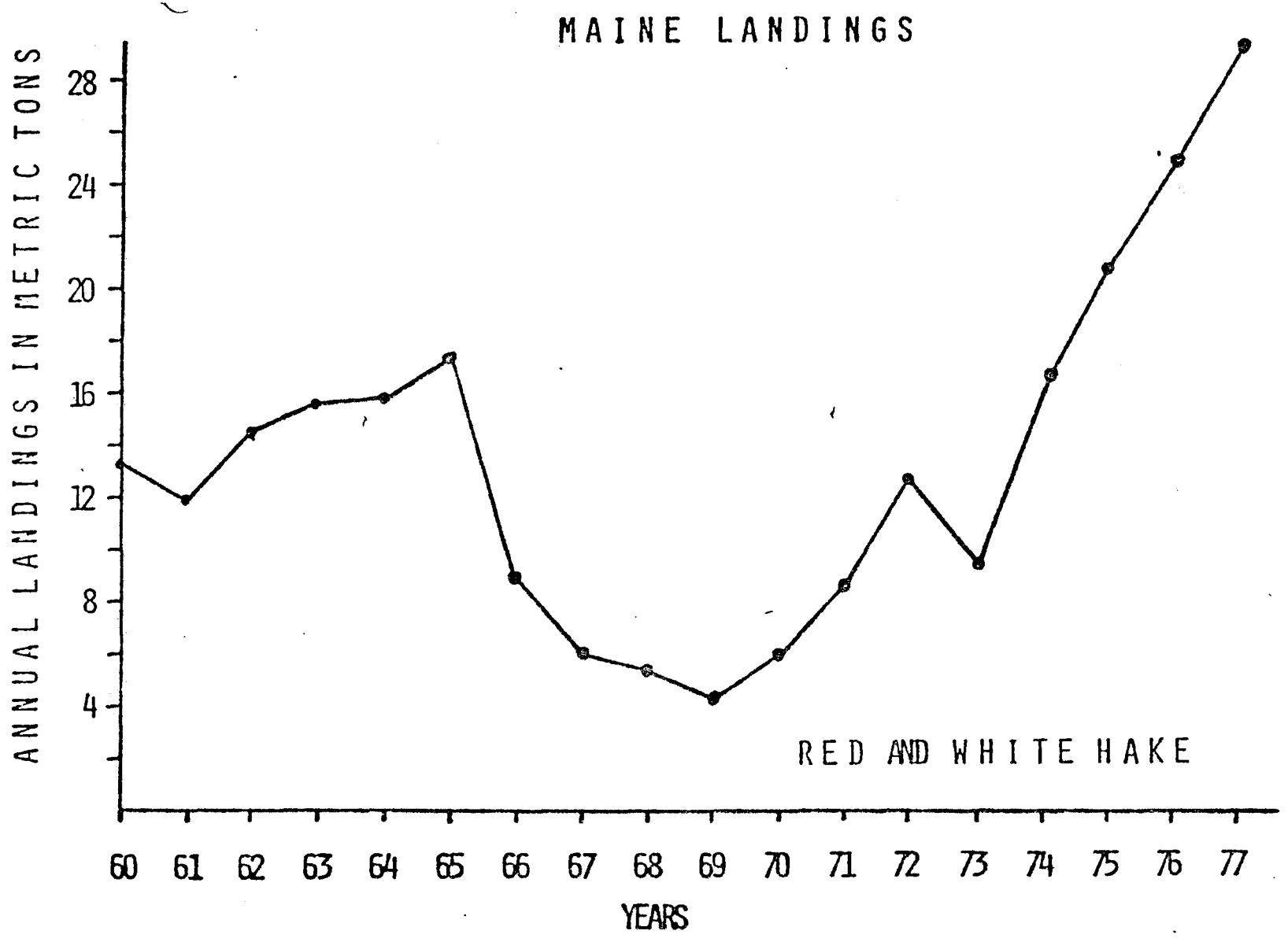
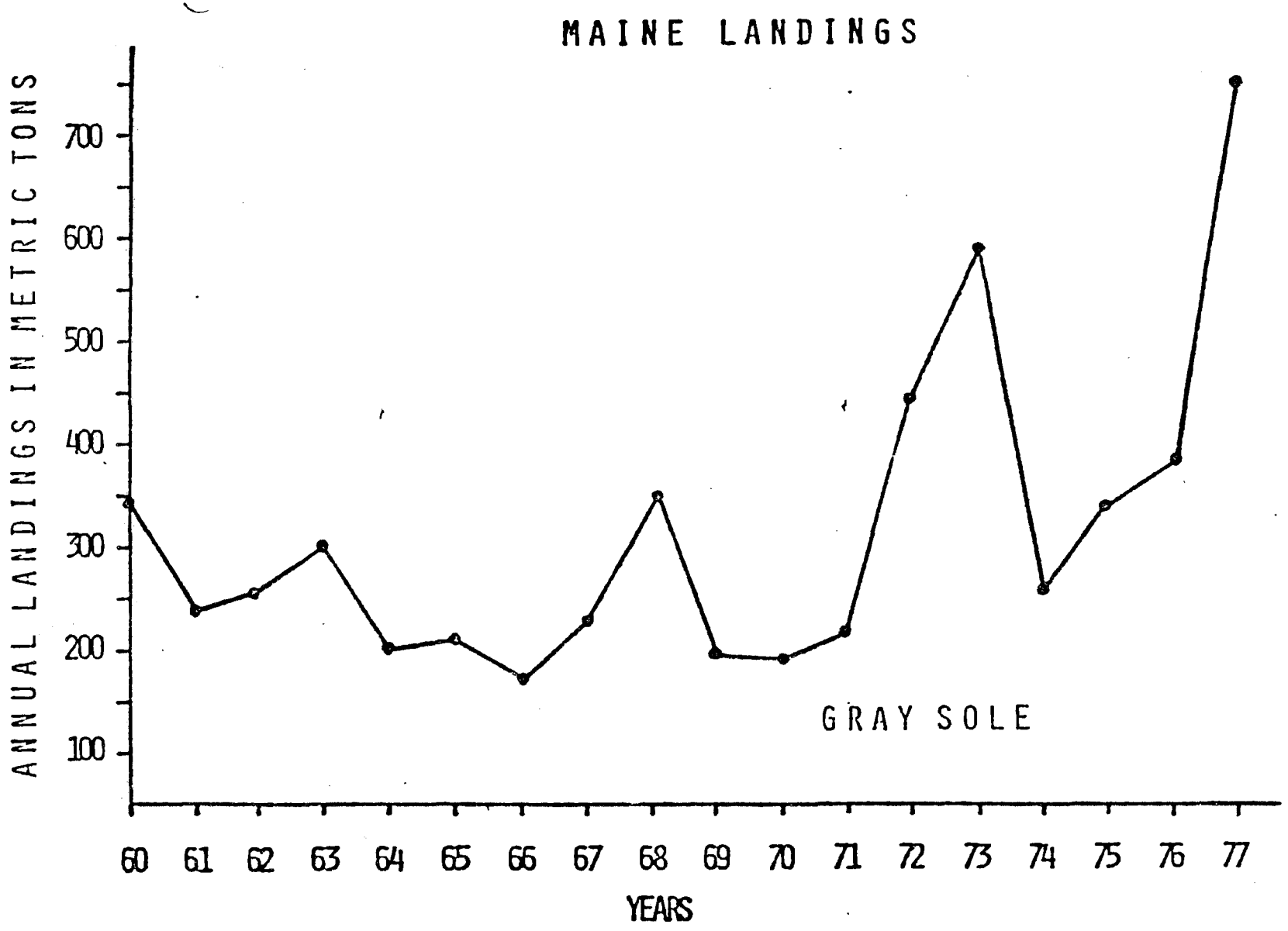
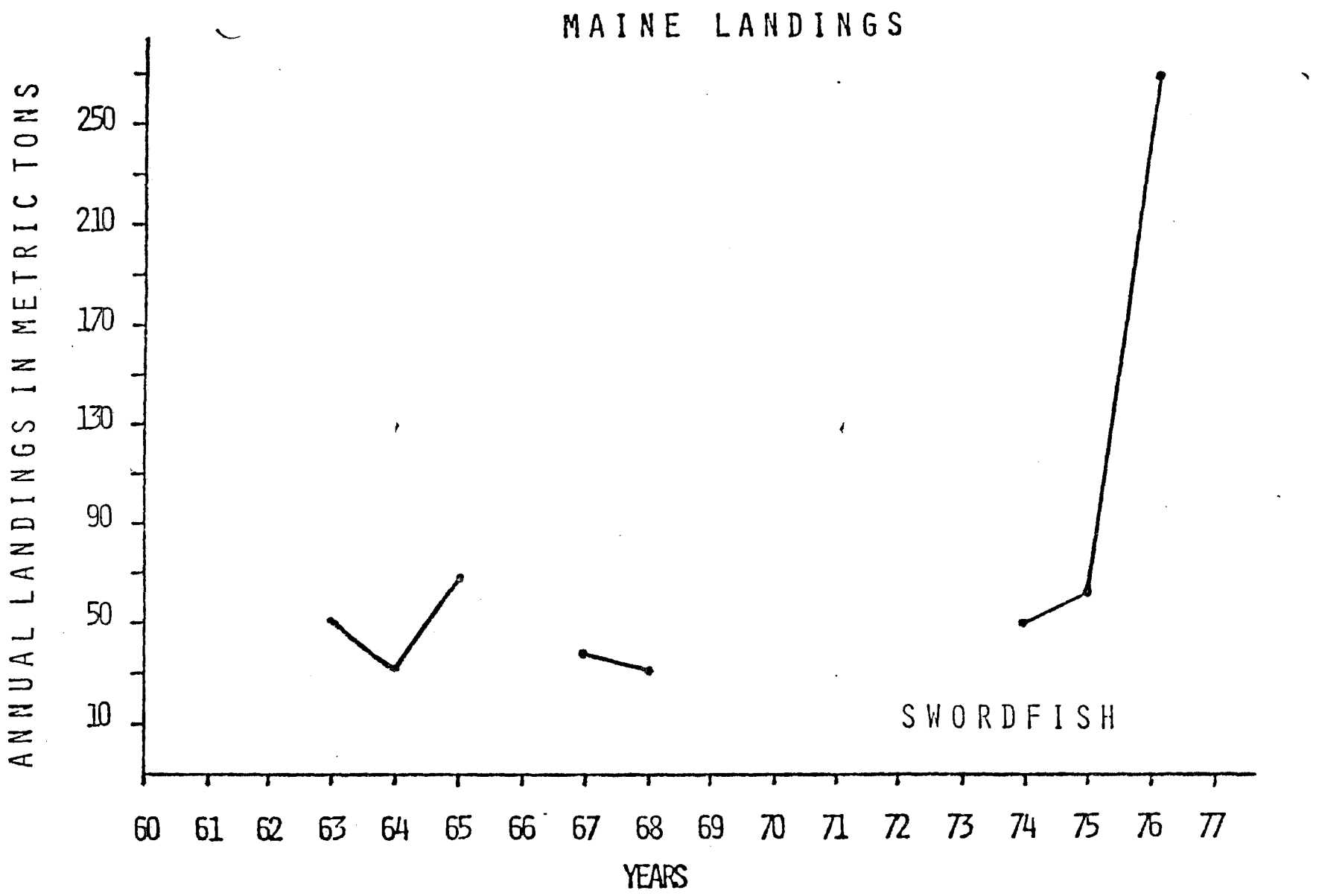
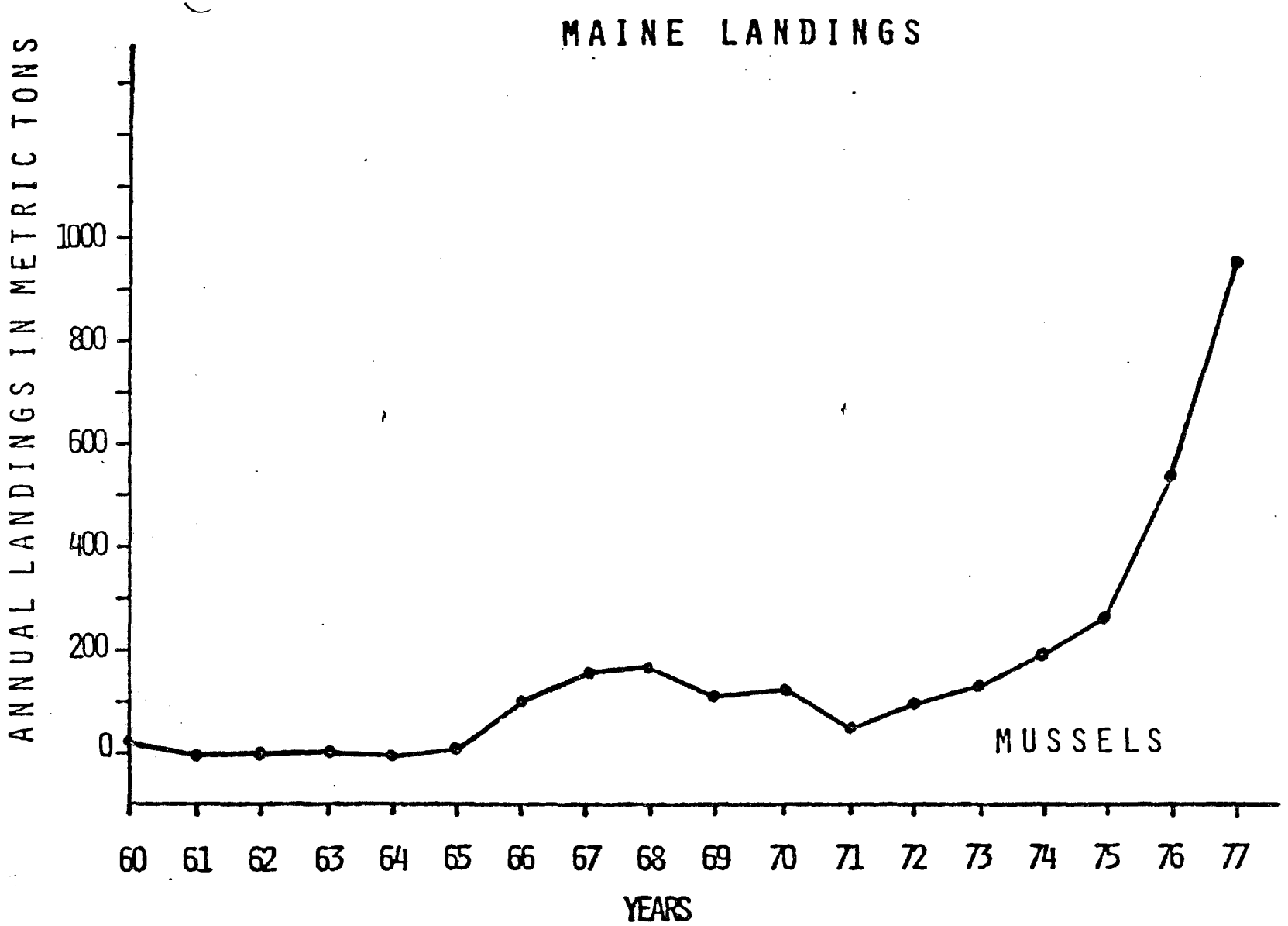
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
YEARS
POLLOCK


MAINE LANDINGS
ANNUAL LANDINGS IN METRIC TONS
28
24
20
16
12
8
4
RED AND WHITE HAKE
60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77
YEARS


MAINE LANDINGS
ANNUAL LANDINGS IN METRIC TONS
100
200
300
400
500
600
700
GRAY SOLE
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
YEARS


MAINE LANDINGS
ANNUAL LANDINGS IN METRIC TONS
250
210
170
130
90
50
10
SWORDFISH
60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77
YEARS


MAINE LANDINGS
ANNUAL LANDINGS IN METRIC TONS
1000
800
600
400
200
0
MUSSELS
60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77
YEARS

## STATUS OF STOCKS

| Species | Value Rank | Catch Quantity Rank | Council Plan In Effect | Council Plan Being Considered | Abundance | Priority |
|---|---|---|---|---|---|---|
| Lobsters | 1 | 3 | | x | Declining | High |
| Clams | 2 | 6 | | | About to decline | High |
| Herring | 3 | 1 | | x | Recovering | High |
| Ocean perch | 4 | 2 | | x | Down | Moderate |
| Cod | 5 | 5 | x | | Declining | High |
| Dab (Amer. Plaice) | 6 | 8 | | | Increasing -? | High |
| Pollock | 7 | 4 | | x | About to decline | High |
| Bloodworms | 8 | 19 | | | Declining | High |
| Sandworms | 9 | 16 | | | Declining | High |
| Haddock | 10 | 10 | x | | Recovering | High |
| Gray Sole | 11 | 13 | | | O.K. | High |
| Scallop (Sea) | 12 | 20 | | x | Declining inshore | High |
| Hake (Red & White) | 13 | 7 | | | ? | High |
| Mussels | 14 | 11 | | | About to decline | High |
| Swordfish | 15 | 21 | | x | Declining | Low |
| Eels | 16 | 24 | | | Declining | Moderate |
| Anglerfish | 17 | 17 | | | O.K. | Low |
| Shrimp | 18 | 13 | | | Recovering | High |
| Cusk | 19 | 15 | | | O.K. | Moderate |
| Rock Crabs | 20 | 14 | | | About to decline | Moderate |
| Yellowtail | 21 | 22 | | | Declining -? | Low |
| Blackback | 22 | 18 | | | Increasing | Moderate |
| Alewives | 23 | 9 | | x | Declining | High |
| Irish Moss | 24 | 12 | | | Declining -? | Moderate? |
| Silver hake | | | | x | Increasing | High |
| Surf clams | | | x | | ? | High |
| Ocean quahogs | | | x | | ? | High |
| Dogfish | | | | x | ? | Moderate |
| Squid | | | | x | O.K. | Low |
| Mackerel | | | x | | O.K. | Low |

Appendix II.

AN ACT to Clarify the Scientific Research Authority of the Department of Marine Resources.

Be it enacted by the People of the State of Maine, as follows:

12 MRSA §6052, sub-§4 is repealed and replaced:

4. Research. Serve as the primary State agency engaging in research for the conservation of marine resources; and engage in all aspects of marine research including:

A. Collecting and analyzing the basic biological, environmental and economic data necessary for understanding the status of and necessary for management of commercial and recreational marine resources;

B. Researching and providing information on marine resources necessary to protect the public health;

C. Researching and providing basic information on biology; chemistry and physics of the marine environment; and

D Providing technical and scientific information and support for all department activities.

STATEMENT OF FACT

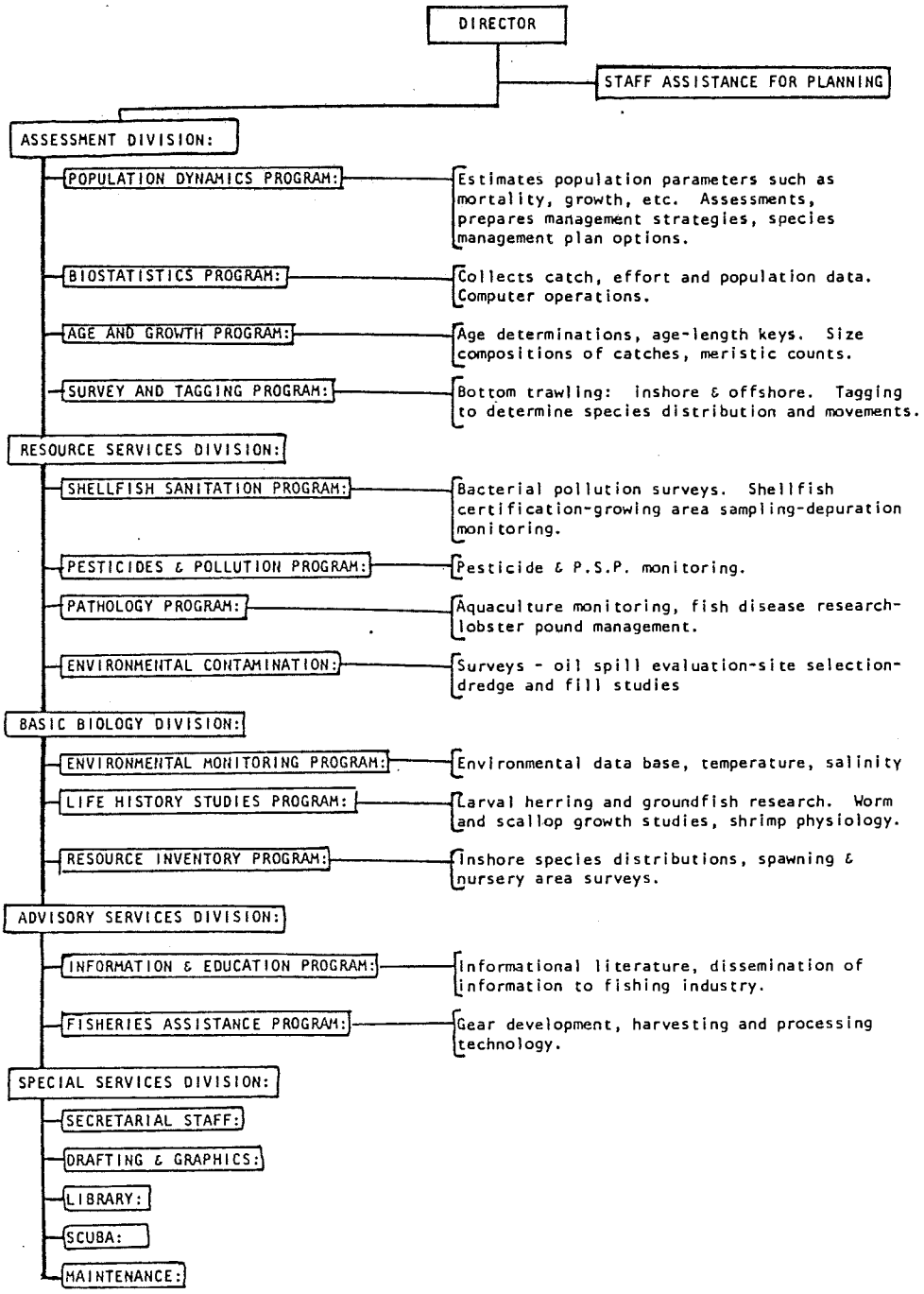
This bill clarifies the authority of the Department of Marine Resources to conduct scientific research. This bill is a recommendation of the Joint Select Committee on Marine Research of the 108th Legislature, as part of its study and Report.

# APPENDIX III

## RESEARCH PLAN
## 1979-1982

ORGANIZATION OF THE BUREAU OF MARINE SCIENCES

The Bureau of Marine Sciences has been restructured from a species project system to a functional group organization. The new structure is more flexible and efficient since the knowledge and experience of scientists in several desciplines can be simultaneously employed for each species or problem.



## EXPANDED DMR ASSESSMENT DIVISION

The general goal of the expanded DMR assessment program will be to develop information for understanding the status of the fish and shellfish stocks, the effects of man upon them and how to manage them for biological and economic objectives.

### OBJECTIVES OF THE ASSESSMENT DIVISION; 1979-1982:

A. Collect research vessel survey and catch data required for short-term trend predictions of the abundance and recruitment of selected commercial and recreational species.

B. Develop information on the distribution, movements and abundance of under-utilized species of potential value to the Maine fishing industry.

C. Collect biological information such as growth, fecundity and size composition in the catch and from research surveys for understanding the effect of fishing on the stocks and the population dynamics of the species.

D. Provide information that will enable the State to evaluate and influence the New England Regional Management Plans that affect Maine fishermen.

E. Collect the biological and economic information to support the preparation of preliminary management plans for groundfish species including cod, haddock, silver, red and white hakes and flounder.

F. Develop and refine the information needed for the operation of ongoing species-management programs.

SCHEDULE OF EVENTS FOR THE ASSESSMENT DIVISION; 1979-1982:

The expanded Bureau of Marine Sciences assessment group will continue research on the population dynamics of lobsters, herring, smelt, alewives, shrimp and scallops to provide information for management. Marine worm research will be restructured with research conducted on growth and the effects of fishing on the stock. The project on shortnose sturgeon will be terminated in 1979. The assessment group, under funding by a Coastal Zone Management grant, will initiate a research planning program encompassing a summer bottom trawl survey, development of a catch and landings data base, characterization of recreational and shellfisheries and the development of an economic data base for fisheries. These planning programs will be operational in 1979 with certain phases completed by September of 1979. The bottom trawl survey is contingent on the acquisition of a vessel. In FY 1980, the expanded stock assessment group will implement programs developed by the Coastal Zone planning study.

BIOSTATISTICS PROGRAM:

1979: Continue established programs for collection of length-age samples and catch statistics for lobsters, herring, shrimp, alewives and smelt (present staff). Develop programs for collection of length-age samples and catch statistics for groundfish (present staff). Implement new sea sampling program for small mesh fisheries during shrimp season (temporary staff). Plan for computer data storage and processing.

1980: Start the collection of catch, effort and landings data for most commercially harvested species (new data collection staff). Sample vessel catch and discards of prerecruits and underutilized species (present staff). Initiate processing of raw data from landings, sampling and bottom trawl surveys for computer storage and manipulation (new programmers and data entry specialist). Develop sampling program for recreational fisheries (existing and new staff).

1981: Collect catch, effort and landings data for selected recreational fisheries (existing and new staff). Computer storage and manipulation of raw sample data for recreational fisheries (new programmers and data entry staff). Construction of computer programs for analyzing and displaying basic data. Coordination of collection systems with NMFS.

1982: Continuation of activities listed above (all staff). Review of data collection system and implementation of necessary modifications. Expansion of sampling programs to additional fisheries.

## SURVEY AND TAGGING PROGRAM:

1979: Conduct spring bottom trawl survey (existing staff and new staff, if available). Continue tagging of selected groundfish species (cod, haddock) to determine seasonal movements. Collect biological samples for age determinations, species composition, etc. Herring, scallop, smelt tagging continued. Seed lobster tagging conducted.

1980: Conduct standardized bottom trawl surveys (new staff). Continue tagging program on selected groundfish species (new staff). Initiate blackback flounder tagging study in mid-coast region. Other tagging programs continued. Initiate tagging program for selected recreational fishery species (existing staff plus new staff).

1981: Conduct standardized bottom trawl surveys (new staff). Expand inshore bottom trawl surveys to cover a wider area of the coast (new staff). Preliminary compilation of tag return data for biostatistics group processing. Continuation of recreational fishery, herring, smelt, cod, lobster and blackback flounder tagging programs.

1982: Continue all programs as needed above. Initiate tagging of some under-utilized species to evaluate movement patterns.

## AGE AND GROWTH PROGRAM:

1979: Continue age determinations for herring (current staff). Develop age-length keys for herring, alewife, smelt (current staff). Plan age determination program and review methodology for selected species (current staff).

1980: Age determinations for herring continued (current staff). Begin age determinations for cod and haddock (new staff). Development of some preliminary age-length keys.

1981: Continue age determinations for species listed above (all staff). Start age determinations for pollock, silver hake, and white hake (new staff). Refine age-length keys (new staff).

1982: Continue age determination program (all staff). Refine age-length keys for all species processed. Begin age determinations for additional species such as gray sole, american plaice, cusk and red hake.

## POPULATION DYNAMICS PROGRAM:

1979: Continue stock assessments for lobsters, herring, shrimp, smelt and alewives (current staff). Evaluate data needs and methodology for assessments of additional species (current staff and new staff). Review assessments being used in N.E. Council Plans. Prepare management strategies for herring and lobster management plans (current staff). Evaluate existing management programs for anadromous fish species and soft-shell clams (current staff). Develop computer capabilities for conducting assessments.

1980: Continue stock assessments and the development and evaluation of management strategies for lobsters, herring, alewives and shrimp (current staff and new staff). Evaluate ongoing research for management of anadromous fish, shellfish and marine worms (current and new staff). Preliminary evaluation of biological data base for commercial fisheries (new staff). Review Council management plans for species involved in Maine fisheries (new staff). Develop computer programs for conducting assessments.

1981: Continue stock assessments for species listed above (all staff). Preliminary assessments for cod haddock, gray sole and American plaice (new staff). Preparation of revised management strategy options for existing species management plans (all staff). Evaluation of Council management plans. Provide data and assessments for Maine stocks to Council.

1982: Maintain ongoing assessments. Preliminary assessments for pollock, red and white hakes. Prepare management strategy options for existing species management plans. Develop shellfish management strategies.

## OPERATIONAL NEEDS OF THE ASSESSMENT DIVISION:

### BIOSTATISTICS PROGRAM:

The biostatistics program should be augmented by eight new staff positions in FY 1980 to achieve the objectives defined for the expanded stock assessment program. Three data collection specialists will be needed to sample the commercial and recreational landings of groundfish, shellfish and some anadromous fish species as scheduled for 1980. They will collect biological samples for the age and growth group and will supply information for the expanded data base starting in 1980.

Two sea sampling specialists will sample the catch aboard commercial and recreational vessels to obtain information on discards, fishing effort, species composition, abundance of under-utilized species and biological samples for the age and growth group. These five staff people will provide the raw data on the harvest required by the biostatistics group. These sampling programs will be initiated in 1980.

One Analyst Programmer III, one Analyst Programmer II and a Keypunch Operator will be required to prepare and process the data produced by the field and sea samplers, the age and growth group and the survey and tagging group. These staff positions will permit the integration and computer processing of the large quantities of data required for the operation of the assessment division.

The expanded program for the biostatistics group will require approximately $20,000 for basic computer equipment in FY 1980. Three vehicles ($18,000) and a travel expense budget of $5000 will be required in 1980 for the operation of the coastal sampling program.

## SURVEY AND TAGGING PROGRAM:

The survey and tagging group will be operating an expanded sea survey which will entail the operation of two sampling vessels. An experienced fishing captain and four vessel crew members will be needed to operate a dragger for the conduct of annual baseline surveys in the Gulf of Maine. This vessel team will conduct the offshore surveys and current staff will conduct inshore surveys. Two marine scientists will be needed to supervise the collection of survey data by both vessels and they will be assisted by sea sampling staff from the Biostatistics Program.

These seven staff positions will provide survey data for the development of indices of abundance for the major species of commercial and recreational importance. They will also generate information on the distribution and movements of these species as well as underutilized species of potential value.

## AGE AND GROWTH PROGRAM:

This group will be expanded by the addition of two Marine Resources Scientists and one Marine Resources Specialist in 1980 to meet the objectives of the Assessment Division. The addition of one scientist and one specialist, will permit the development of age and growth data and

age-length keys for cod and haddock by 1981 and pollock by 1982. The second scientist position will permit the development of age and growth data on silver hake by 1981 and red and white hakes by 1982. Operations of this group should also permit some coverage of American plaice and gray sole by 1982.

## POPULATION DYNAMICS PROGRAM:

This group should be augmented by the addition of two assessment scientists at the Marine Resources Scientist III level in FY 1980. These people will enable the group to provide assessments for additional species as required for the objectives of the expanded program while maintaining the current assessment studies.

The assessment and analytical procedures used by the population dynamics scientists will require the services of an Analyst Programmer III. This position will provide and maintain the computer capabilities needed for conducting the assessments. These three staff positions will, collectively, permit preliminary stock assessments for cod, haddock, silver hake and white hake by 1982. These staff positions will also enable the population dynamics program to analyze additional data such as economic information for the preparation of preliminary fishery management plans for these priority species.

## EXPANDED RESOURCE SERVICES DIVISION

The general goals of the expanded Resource Services Division will be to evaluate and measure hazards to the public health arising from pollution, oil spills and contamination; to evaluate the effects of natural phenomena and human activities on the environment and fisheries; to advise and assist with the processing of Maine's shellfish resources; and to manage the harvest of shellfish on a day to day basis.

### OBJECTIVES:

A. Expand shellfish sanitary surveys to a level that complies with the minimum set by the Federal Certification Program which should result in providing better quality shellfish to the consumer.

B. Improve the timing and efficiency of harvesting Maine's shellfish resources when they are affected by Paralytic Shellfish Poisoning.

C. Assess the effects of environmental pollution by pesticides, oil spills and chemical contaminants.

D. Evaluate the impacts of industrial site selection, hydroelectric development, dredging, spoil dumping and wetlands alteration on marine resources.

E. Monitor aquacultural activities to prevent the introduction of exotic species, diseases, parasites, pests or predators into Maine or from area to area within the State.

### SCHEDULE OF EVENTS FOR THE RESOURCE SERVICES DIVISION; 1979-1982:

#### SHELLFISH SANITATION; POLLUTION AND PESTICIDES PROGRAMS:

These two programs jointly operate an integrated field sampling program. The sampling programs for detection of bacterial pollution of shellfish and monitoring of paralytic shellfish poison are presently understaffed. Inefficiencies in harvesting and significant losses in landed value are a direct result of this problem. New staff will be trained in the program operations in 1980 which will improve the sampling program immediately.

## PATHOLOGY AND AQUACULTURE PROGRAM:

1979: Continue the development of the pathology program (current staff). Additional equipment will be purchased, a histologist will be trained and shellfish transplant certification procedures will be outlined. Initiate program for the inspection and certification of imported species to detect pathogens and parasites (new staff). Continue to assist industries by identifying fish disease problems and causes of die-offs.

1980: Initiate routine monitoring program for examination and certification of imports and exports of marine organisms for aquaculture (new staff).

1981: Continue monitoring program for imports and exports. Develop expanded advisory services program for aquaculture operations and lobster pound management in cooperation with the Advisory Services Division staff. Evaluate disease problems due to intrastate transfer of oysters.

1982: Continuation of monitoring and certification programs. Assist in developing aquaculture management and Advisory Service programs.

## ENVIRONMENTAL CONTAMINATION PROGRAM:

1979: Preliminary baseline studies on the resources of the Casco Bay area potentially affected by an oil spill. This work will be started under a contract grant with DEP (supervison of contract agents by DMR staff).

1980: Completion of Casco Bay survey by new DMR staff. Planning of expanded survey to other areas. Conduct cooperative work with other agencies. Evaluation of dredge and fill site impacts in cooperation with Corps of Engineers (new staff). Planning for computer processing and analyses.

1981: Computer storage of Casco Bay survey data (new Biostatistics staff and Resource Services staff). Start survey and studies in additional areas of the Maine coast (new staff). Evaluate impacts of site selection and dredge and fill operations on marine resources (all staff).

1982: Continuation of survey programs. Incorporation of Penobscot Bay-Cobscook Bay data into biological data base. Evaluate environmental impact assessments by consulting firms (new staff).

## OPERATIONAL NEEDS OF THE RESOURCE SERVICES DIVISION:

### SHELLFISH SANITATION PROGRAM:

The field sampling portion of this program should be expanded in 1980 by the addition of 3 staff positions at the Marine Resources Specialist level. These positions will permit a more complete coverage of coastal shellfish growing areas and allow the opening and closing of harvesting areas on a more efficient basis. They will also assist in all other phases of field sampling of the Division.

### POLLUTION AND PESTICIDES PROGRAM:

This program will require the addition on one Marine Resources Specialist in FY 1980. This person will enable DMR to monitor bacterial pollution, pesticides and chemical contaminants more efficiently. This Specialist will also markedly improve the Department's ability to address environmental crises. The immediate results of the addition of these four staff positions in the two programs will be to improve shellfish management and minimize the effects of harvesting closures due to pollution and environmental contamination.

### PATHOLOGY AND AQUACULTURE PROGRAM:

This program should be expanded by the addition of a Marine Resources Scientist I in FY 1980. This person will conduct the histological and pathological studies that are needed to monitor imports and transplants of various species (mainly shellfish) to Maine and within Maine waters. This program is designed to avoid the introduction of undesirable species to Maine and control the spread of parasites, diseases, and predators. These programs are mandated by Marine Resources Laws, Sections 6071, 6072, 6073 and 6074.

### ENVIRONMENTAL CONTAMINATION PROGRAM:

This program should be expanded by adding two Marine Resources Scientists positions. These scientists will evaluate the impacts of industrial site development, dredge and fill operations, wetlands alterations and oil spills on coastal resources as mandated under Marine Resources Laws, Section 6072.

## BASIC BIOLOGY DIVISION

The general goals of the Basic Biology Division's research programs are the resolution of specific biological, ecological and environmental problems associated with fishery and resource management.

These research programs complement the population dynamics research conducted by the Assessment Division. They are planned to elucidate fundamental population processes and provide the basic parameters required for population dynamics modeling. The available information on ecological interactions and population processes of marine species in the Gulf of Maine at the present time is inadequate for multispecies management and the research objectives of this division will be expanded during the latter half of the five year program. Current projects in the Life History Studies program are goal-oriented field and laboratory research studies encompassing objectives B through F. Information derived through these studies of population processes and ecological and environmental relationships are used for analyses by the Assessment Division and for planning and management work by the Resource Services Division.

### OBJECTIVES OF THE BASIC BIOLOGY DIVISION; 1979-1982:

A. Maintain the long-term environmental data base (began in 1905) which provides some of the information needed to assess the effects of the environment on marine resources.

B. Evaluate the relationships among inshore larval herring abundance, distribution and subsequent recruitment to the juvenile herring fishery.

C. Conduct surveys to estimate the distribution and abundance of larval groundfish (cod, haddock and pollock) in Maine coastal waters.

D. Assess the effects of ecological and environmental parameters on the reproduction of northern shrimp to support the development of yield models for management.

E. Determine the growth rates of commercially harvested marine worm species under controlled conditions to support the development of yield models for management.

F. Determine the growth rates of scallops in selected areas to support the development of yield models for management.

G. Conduct a resource inventory of the inshore waters of the coast to determine species distributions and identify spawning and nursery areas for improved resource management.

SCHEDULE OF EVENTS FOR THE BASIC BIOLOGY DIVISION; 1979-1982:

ENVIRONMENTAL MONITORING PROGRAM:

1979: Maintain environmental monitoring program. Plan expanded monitoring system.

1980: Train new Marine Resources Specialist in operation and maintenance of monitoring equipment. Plan computer storage and retrieval of environmental data (monitoring staff and biostatistics group staff). Maintain monitoring program.

1981: Implement expanded monitoring program (data buoy). Computer storage and processing of some data. Maintain monitoring programs.

1982: Maintain monitoring programs. Environmental data used in management modeling routines. Evaluate data buoy information.

LIFE HISTORY STUDIES PROGRAM:

1979: Maintain research programs on shrimp reproduction and larval herring distribution and abundance (current staff). Scallop growth studies continue (current staff).

1980: Two Marine Resources Specialists added to staff for shrimp, worms and herring projects. Marine worm growth study started. Larval herring sampling program expanded (new staff). Cod, haddock and pollock larvae sampled in inshore waters.

1981: Maintain research programs with current staff. Coordinate growth studies on worms and scallops with University research programs. Shrimp research results will be used in management modeling (current staff and population dynamics staff). Life history program data used in resource services planning. Continue sampling program for larval herring, cod, haddock and pollock (current staff).

1982: Maintain research programs with current staff. Scallop growth data used in management modeling (current staff and population dynamics staff). Program data incorporated into expanded biological data base and used for resources services planning evaluation of environmental impacts and management strategy evaluation.

RESOURCE INVENTORY PROGRAM:

1979: Some program planning. Identification of available data. Define information needs for inshore fisheries characterizations (current staff). Discussions with U.S. Fish and Wildlife Service. No staff assigned to this program.

1980: Available data from DMR files and other sources compiled by current staff of other programs. Preliminary descriptive data on recreational fishery stocks. Portions of contract work incorporated into data base (No new staff available).

1981: Contract personnel funded by grants initiate inventory program. Data prepared for computer storage (contract personnel and biostatistics staff). Some data available for recreational fishery planning (population dynamics staff).

1982: Program continued (contract personnel and current staff). Computer storage of some data.

OPERATIONAL NEEDS OF THE BASIC BIOLOGY DIVISION; 1979-1982:

ENVIRONMENTAL MONITORING PROGRAM:

This program is currently staffed by one Marine Resources Scientist III. A Marine Resources Specialist position should be allocated for this program which will allow the scientist to assume additional responsibilities. New automated equipment for monitoring environmental variables will be added in 1981 and 1982.

LIFE HISTORY STUDIES PROGRAM:

The larval herring research program will initiate comparative distribution and abundance studies in the eastern area of the coast. This program will require the allocation of a Marine Resources Specialist position and approximately $12,000 for operating expenses and equipment

in FY 1980. Additional gear and operating expenses will be needed in 1981 and inshore sample catches will be evaluated for the distribution of other species.

The field and laboratory studies on shrimp reproduction and early life history stages will be continued. This program will require the allocation of a new Marine Resources Specialist position. Renovation of laboratory facilities for use in several research programs, including the shrimp work will require approximately $22,000 in FY 1980.

A growth study on marine worms will be initiated after the completion of the Resource Services Division's clam tumor study. DMR's wet lab facilities are limited presently due to sharing with Bigelow which requires sequential scheduling of some projects. This study will be initiated with available staff sometime in FY 1980. The scallop growth study will be continued with present staff. This work on growth rates and age determination of scallops will provide data needed for yield modeling by the Assessment Division.

RESOURCE INVENTORY PROGRAM:

There are no new or current staff positions available for this program. The program will be conducted through the cooperative work of the present staff and contract employees. The work will encompass field surveys and the compilation of data derived from other programs to determine inshore and estuarine distributions of selected species. These data will be used for planning purposes, site selection, evaluation of environmental impact statements, and as supportive information in management modeling.

## ADVISORY SERVICES DIVISION

The general goals of the Advisory Services Division are to provide information and technical assistance to Maine's fishing industry.

### OBJECTIVES OF THE ADVISORY SERVICES DIVISION; 1979-1982:

A. To assist the Maine fishing industry in developing ways to harvest and process under-utilized species.

B. To disseminate information to the fishing industry of Maine concerning the latest developments in management, harvesting and processing of renewable marine resources, or other coastal issues of importance to the industry.

C. Provide technical assistance to the Department's research and management programs.

D. Act in a liason role between the fishing industry, coastal inhabitants and general public and the Department's research and management staff.

### SCHEDULE OF EVENTS FOR THE ADVISORY SERVICES DIVISION: 1979-1982:

Advisory Service programs and projects to achieve the listed objectives are currently in operation and will be continued through 1982. Advisory services planning in 1979 will determine the future direction of this Division. Additional people and money may be required in 1980-1981. Programs and projects involved with objectives C and D must be flexible to address the changing requirements of the industry.

Program emphasis, through 1982, will concentrate on fishing gear development, communication, exploratory surveys with emphasis on under-utilized species. Short term projects concerning informational and educational publications on management, harvesting and processing developments will be conducted as needed.

## SPECIAL SERVICES DIVISION

This Division incorporates the secretarial staff, the drafting and graphics service, the library, scuba team and the maintenance group.

The primary purpose of the Division is to provide support and maintenance services for the Bureau of Marine Sciences.

## SECRETARIAL STAFF

The expanded Bureau activities will require the addition of two clerk-typist positions, one in 1980 and the second in 1981. Office equipment and operational expenses will be approximately $10,000 in Fy 1980 and $20,000 in FY 1981.

## LIBRARY:

The Scientific Library at Boothbay Harbor provides reference resources for the Bureau of Marine Sciences and the fishing industry, The Library maintains an extensive collection of current scientific journals and reference texts and provides literature search and bibliographic services to the scientific staff. The Library will require the services of a Librarian III in 1981 and the budget should be increased by approximately $15,000 in FY 1980 and maintained at that level to meet the needs of the expanded Bureau of Marine Sciences.

## DRAFTING AND GRAPHICS:

Scientific and technical staff will continue to do their own photography, drafting and graphics work through 1980. This is a costly and inefficient system. The increased demands on professional staff time in the expanded Bureau of Marine Sciences will require the addition of a professional graphics staff position at the Engineering Technician II level. This service will require an operating budget for capital equipment and supplies of $9500 the first year (1981).

## MAINTENANCE GROUP:

There are no planned personnel expandsions in the maintenance group at this time despite an understaffing problem. The needs of this group will expand proportionately with the increase in Bureau staff and some storage areas at the Boothbay Harbor Laboratory Facility will be converted into office and laboratory facilities.

PROPOSED BUREAU OF MARINE SCIENCES BUDGET

| | FY 78 | FY 79 | FY 80 | FY 81 |
|---|---|---|---|---|
| **Assessment Division** | | | | |
| Age & Growth | 7,100 | 8,800 | 71,445 | 76,599 |
| Population Dynamics | 117,100 | 138,400 | 203,990 | 211,351 |
| Biostatistics | 175,400 | 206,800 | 431,258 | 434,562 |
| Survey & Tagging | 65,900 | 75,800 | 197,633 | 206,642 |
| | 365,500 | 429,800 | 904,326 | 929,154 |
| **Basic Biological Studies** | | | | |
| Environmental Monitoring | 20,200 | 24,500 | 43,891 | 77,178 |
| Life History | 119,900 | 137,800 | 221,147 | 216,857 |
| | 140,100 | 162,300 | 265,038 | 294,035 |
| **Special Services** | | | | |
| Office of Director | 34,900 | 42,500 | 45,700 | 46,800 |
| Maintenance | 187,200 | 220,300 | 263,500 | 270,500 |
| Secretarial Staff | 27,400 | 33,800 | 48,041 | 58,303 |
| Drafting & Photography | - | - | 9,500 | 20,922 |
| Library | - | - | 15,000 | 26,854 |
| | 249,500 | 296,600 | 381,741 | 423,379 |
| **Resource Services** | | | | |
| Shellfish Sanitation | 23,100 | 25,900 | 96,684 | 94,477 |
| Pollution & Pesticides | 92,300 | 113,300 | 126,700 | 131,400 |
| Pathology | 30,300 | 37,100 | 84,891 | 81,174 |
| Environmental Contamination | - | - | 31,875 | 41,148 |
| | 145,700 | 176,300 | 340,150 | 348,199 |
| **Advisory Services** | | | | |
| Public Information | 32,700 | 40,200 | 45,800 | 47,800 |
| Fisheries Assistance | 110,200 | 135,200 | 152,100 | 158,300 |
| | 142,900 | 175,400 | 197,900 | 206,100 |
| TOTAL PROGRAMS | 1,043,800 | 1,240,400 | 2,089,155 | 2,200,867 |

SUMMARY OF PROPOSED BUREAU OF
MARINE SCIENCES BUDGET EXPANSIONS

| | FY 80 | (New Positions) | FY 81 | |
|---|---|---|---|---|
| **Assessment Division** | | | | |
| Age & Growth | $ 61,045 | (3) | $ 65,599 | |
| Population Dynamics | 43,990 | (2) | 45,051 | |
| Biostatistics | 195,158 | (9) | 190,162 | |
| Survey & Tagging | 110,733 | (6) | 117,242 | |
| Subtotal | $410,926 | (20) | $418,054 | |
| **Basic Biological Studies** | | | | |
| Environmental Monitoring | $ 18,491 | (1) | $ 51,378 | |
| Life History | 22,692 | (2) | 23,757 | |
| Subtotal | $ 84,238 | (3) | $108,635 | |
| **Special Services** | | | | |
| Office of Director | | | | |
| Maintenance | $ 27,000 | | $ 30,000 | |
| Secretarial Staff | 10,441 | (1) | 19,403 | (1) |
| Drafting & Photography | 9,500 | | 20,922 | (1) |
| Library | 15,000 | | 26,854 | (1) |
| Subtotal | $ 61,941 | (1) | $ 97,179 | (3) |
| **Resource Services** | | | | |
| Shellfish Sanitation | $ 56,710 | (3) | $ 47,979 | |
| Pollution & Pesticides | 11,674 | (1) | 17,798 | |
| Pathology | 43,491 | (1) | 38,174 | |
| Environmental Contamination | 26,982 | (2) | 28,348 | |
| Subtotal | $143,745 | (7) | $145,099 | |
| **Advisory Services** | | | | |
| Public Information | | No increase | | |
| Fisheries Assistance | | | | |
| TOTAL PROGRAMS | $700,850 | (31) | $768,967 | (3) |

| ASSESSMENT DIVISION: | | | | FY 1980 | FY 1981 |
|---|---|---|---|---|---|
| **Age & Growth:** | | | | | |
| Personal Services | Code | Number | Costs* | | |
| Scientist II | 9363 | 2 | $14,850 | $29,700 | $31,169 |
| Specialist | 9361 | 1 | 11,346 | 11,346 | 11,878 |
| Total | | | | $41,046 | $43,047 |
| Capital Equipment | | | | | |
| Desks | | | | $ 687 | $ |
| Files | | | | 324 | 345 |
| Refrigerator | | | | 500 | |
| Chest Freezer | | | | 485 | 2,231 |
| Water Bath | | | | 235 | |
| Scales | | | | 630 | 645 |
| Scale Press | | | | 900 | |
| Isomet Saw, Baking Oven | | | | 1,600 | 1,200 |
| Microscope | | | | 3,025 | 3,150 |
| Scale Projector | | | | 2,500 | 4,500 |
| Total | | | | $10,885 | $12,071 |
| All Other | | | | 9,114 | 10,481 |
| Age & Growth Totals: | | | | $61,045 | $65,599 |
| **Population Dynamics:** | | | | | |
| Personal Services | Code | Number | Costs* | | |
| Scientist III | 9364 | 2 | $16,995 | $33,990 | $36,631 |
| Total | | | | $33,990 | $36,631 |
| Capital Equipment | | | | | |
| Desks | | | | $ 458 | $ |
| Files | | | | 1,296 | 920 |
| Electric Typewriter (with symbol ball) | | | | 458 | |
| Desk Calculators | | | | 1,350 | 600 |
| Total | | | | $ 3,562 | $ 1,520 |
| All Other | | | | 6,438 | 6,900 |
| Population Dynamics Totals: | | | | $43,990 | $45,051 |

* All personal Services include salary (entrance level), retirement (14.62% for 1980, 14.95% for 1981) and health benefits at $450 for each position.

ASSESSMENT DIVISION: (continued)

| | Code | Number | Costs* | FY 1980 | FY 1981 |
|---|---|---|---|---|---|
| **Biostatistics:** | | | | | |
| Personal Services | | | | | |
| Analyst Programmer III | 0147 | 1 | $17,615 | $ 17,615 | $ 18,502 |
| Analyst Programmer II | 0146 | 1 | 16,399 | 16,399 | 17,211 |
| Data Entry Specialist | 0142 | 1 | 8,566 | 8,566 | 8,962 |
| Scientist II (statistics) | 9363 | 1 | 14,850 | 14,850 | 15,584 |
| Specialist | 9361 | 3 | 11,346 | 34,038 | 35,635 |
| Scientist II | 9363 | 2 | 14,850 | 29,700 | 31,169 |
| Total | | | | $121,158 | $127,063 |
| Capital Equipment | | | | | |
| Scales | | | | $ 1,260 | $ |
| Desks | | | | 2,061 | |
| Files | | | | 1,944 | 690 |
| Calculators | | | | 4,275 | |
| Computer Equip. (terminal, disc, plotter) | | | | 20,000 | 20,000 |
| Vehicles (pick-ups) | | | | 16,278 | |
| Total | | | | $ 45,818 | $ 20,690 |
| All Other | | | | 28,182 | 10,000 |
| Biostatistics Totals: | | | | $195,158 | $190,162 |
| **Survey and Tagging:** | | | | | |
| Personal Services | | | | | |
| Ferry Service Captain | 8473 | 1 | $16,995 | $ 16,995 | $ 18,316 |
| Specialist | 9361 | 3 | 11,346 | 34,038 | 35,635 |
| Scientist II | 9363 | 2 | 14,850 | 29,700 | 31,169 |
| Total | | | | $ 80,733 | $ 85,120 |
| Capital Equipment | | | | | |
| Desks | | | | $ 916 | $ 244 |
| Files | | | | 864 | 460 |
| Calculators and Printers | | | | 900 | |
| Total | | | | $ 2,680 | $ 704 |
| All Other | | | | 27,320 | 31,418 |
| Survey and Tagging Totals: | | | | $110.733 | $117,242 |
| ASSESSMENT DIVISION TOTALS: | | | | | |
| Personal Services | | | | $276,927 | $291,861 |
| Capital Equipment | | | | 62,945 | 44,985 |
| All Other | | | | 71,054 | 81,208 |
| Total | | | | $410,926 | $418,054 |

| BASIC BIOLOGY DIVISION: | | | | FY 1980 | FY 1981 |
|---|---|---|---|---|---|
| Environmental Monitoring: | | | | | |
| Personal Services | Code | Number | Costs* | | |
| Specialist | 9361 | 1 | $11,346 | $ 11,346 | $ 11,878 |
| Total | | | | $ 11,346 | $ 11,878 |
| Capital Equipment | | | | | |
| Desk | | | | $ 229 | $ |
| File | | | | 216 | |
| Calculator | | | | 100 | |
| Integrated Radiant Energy Recording Unit | | | | 4,600 | |
| Data Buoy | | | | | 29,000 |
| Total | | | | $ 5,145 | $ 29,000 |
| All Other | | | | 2,000 | 10,500 |
| Environmental Monitoring Totals: | | | | $ 18,491 | $ 51,378 |
| Life History Studies: | | | | | |
| Personal Services | Code | Number | Costs* | | |
| Specialist | 9361 | 2 | $11,346 | $ 22,692 | $ 23,757 |
| Total | | | | $ 22,692 | $ 23,757 |
| Capital Equipment | | | | | |
| Lab Instruments | | | | $ 2,000 | $ 1,000 |
| Microscopes | | | | 2,700 | |
| Field Equipment | | | | 7,400 | 7,000 |
| Vessel Equipment | | | | 400 | 1,000 |
| Desks | | | | 458 | |
| Files | | | | 216 | |
| Refrigeration & Water Supply | | | | 15,500 | 3,500 |
| Total | | | | $ 28,674 | $ 12,500 |
| All Other | | | | 14,381 | 21,000 |
| Life History Studies Totals: | | | | $ 65,747 | $ 57,257 |
| BASIC BIOLOGY DIVISION TOTALS: | | | | | |
| Personal Services | | | | $ 34,038 | $ 35,635 |
| Capital Equipment | | | | 33,819 | 41,500 |
| All Other | | | | 16,381 | 31,500 |
| Total | | | | $ 84,238 | $108,635 |

| SPECIAL SERVICES DIVISION: | | | | FY 1980 | FY 1981 |
|---|---|---|---|---|---|
| Secretarial Staff: | | | | | |
| Personal Services | Code | Number | Costs* | | |
| Clerk-Typist II | 0012 | 1 | $ 8,322 | $ 8,322 | $ 17,039 |
| Total | | | | $ 8,322 | $ 17,039 |
| Capital Equipment | | | | | |
| Typewriter | | | | $ 458 | $ 490 |
| Desk | | | | 229 | 244 |
| Files | | | | 432 | 230 |
| Total | | | | $ 1,119 | $ 964 |
| All Other | | | | 1,000 | 1,400 |
| Secretarial Staff Totals | | | | $ 10,441 | $ 19,403 |
| Library: | | | | | |
| Personal Services | Code | Number | Costs* | | |
| Librarian II | 3112 | 1 | $11,854 | $ | $ 11,854 |
| Total | | | | $ | $ 11,854 |
| All Other | | | | 15,000 | 15,000 |
| Library Totals: | | | | $ 15,000 | $ 26,854 |
| Drafting and Graphics: | | | | | |
| Personal Services | Code | Number | Costs* | | |
| Engineering Technician II | 6335 | 1 | $10,992 | | $ 10,922 |
| Total | | | | | $ 10,922 |
| Capital Equipment | | | | | |
| Cameras & Reproduction Gear | | | | $ 3,500 | $ 4,000 |
| Total | | | | $ 3,500 | $ 4,000 |
| All Other | | | | 6,000 | 6,000 |
| Drafting and Graphics Totals: | | | | $ 9,500 | $ 20,922 |

| SPECIAL SERVICES DIVISION: (continued) | | | | FY 1980 | FY 1981 |
|---|---|---|---|---|---|
| Facility Maintenance: | | | | | |
| | Code | Number | Costs* | | |
| Capital Equipment | | | | $ 6,000 | $ 10,000 |
| Total | | | | $ 6,000 | $ 10,000 |
| All Other | | | | 21,000 | 20,000 |
| Facility Maintenance Totals: | | | | $ 27,000 | $ 30,000 |
| SPECIAL SERVICES DIVISION TOTALS: | | | | | |
| Personal Services | | | | $ 8,322 | $ 39,815 |
| Capital Equipment | | | | 10,619 | 14,964 |
| All Other | | | | 43,000 | 52,400 |
| Total | | | | $ 61,941 | $ 97,179 |
| RESOURCE SERVICES DIVISION: | | | | | |
| Shellfish Survey, Pollution & Pesticides: | | | | | |
| Personal Services | Code | Number | Costs* | | |
| Specialist | 9361 | 4 | $11,346 | $ 45,384 | $ 47,512 |
| Total | | | | $ 45,384 | $ 47,512 |
| Capital Equipment | | | | | |
| Desk | | | | $ 915 | $ |
| File | | | | 432 | 460 |
| Vehicles (trucks) | | | | 10,852 | 5,805 |
| Total | | | | $ 12,199 | $ 6,265 |
| All Other | | | | 10,801 | 12,000 |
| Shellfish Survey, Pollution & Pesticides Totals | | | | $ 68,384 | $ 65,777 |

| RESOURCE SERVICES DIVISION: (continued) | | | | FY 1980 | FY 1981 |
|---|---|---|---|---|---|
| **Pathology:** | | | | | |
| Personal Services | Code | Number | Costs* | | |
| Scientist I | 9362 | 1 | $13,491 | $ 13,491 | $ 14,174 |
| Total | | | | $ 13,491 | $ 14,174 |
| Capital Equipment | | | | | |
| Desk | | | | $ 229 | $ |
| File | | | | 108 | |
| Histology Lab Equipment | | | | 16,500 | 6,000 |
| Total | | | | $ 16,837 | $ 6,000 |
| All Other | | | | 13,163 | 18,000 |
| Pathology Totals | | | | $ 43,491 | $ 38,174 |
| **Environmental Contamination:** | | | | | |
| Personal Services | Code | Number | Costs* | | |
| Scientist I | 9362 | 2 | $13,491 | $ 26,982 | $ 28,348 |
| Total | | | | $ 26,982 | $ 28,348 |
| Capital Equipment | | | | | |
| Desk | | | | $ 458 | $ |
| File | | | | 432 | |
| Boat, Motor & Trailer | | | | | 6,800 |
| Total | | | | $ 893 | $ 6,800 |
| All Other | | | | 4,000 | 6,000 |
| Environmental Contamination Totals: | | | | $ 31,875 | $ 41,148 |
| RESOURCE SERVICES TOTALS: | | | | | |
| Personal Services | | | | $ 85,852 | $ 90,034 |
| Capital Equipment | | | | 29,929 | 19,065 |
| All Other | | | | 27,964 | 36,000 |
| Total | | | | $143,745 | $145,099 |

# STATE OF MAINE

APPENDIX IV

## Inter-Departmental Memorandum

Date January 23, 1979

To O. W. Siebert, State Budget Officer Dept. Bureau of the Budget

From Vinal O. Look, Commissioner Dept. Marine Resources

Subject SPECIAL PART II BUDGET REQUEST -- DMR/SMRC

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The 108th Legislature established the Select Marine Research Committee to study the general purposes and goals of DMR's research, the present and proposed five-year research plan, a budget for that plan, present and proposed legislative authorization, principals of priority, and the relationship between public and private marine research facilities in Maine. A final detailed committee report is nearly complete and will be presented to the Governor and Legislature in the very near future as a companion document to our Special DMR/SMRC Part II Budget Request which is being submitted to your office today on appropriate forms.

The Department concurs with the findings of the Committee and supports the need for an expanded research and management program which is capable of producing information and plans required under the new Public Law 94-265, (Fisheries Conservation and Management Act.) The act extends the United States' jurisdiction to 200 miles and establishes quotas and management plans on most species. In order to adequately represent the Maine fishing industry, review and participate in the establishment of management plans under FCMA, prepare management plans for Maine's territorial waters, and seek Maine's fair share of quotas, we must have added capabilities which were not required in past years. Another very important involvement is with the Coastal Zone Management program. Our agency has a key role and responsibility in this major coastal program.

Our Special Part II Budget Request is presented in cooperation with the Select Marine Research Committee for the purpose of bringing their findings before you for further consideration within the Governor's total program for the next biennium. This budget request represents our General Fund requirements to implement the Committee's plan. New positions and expenses which we feel reasonably certain of funding with anticipated federal and revenue account monies have been taken from the total requested by the Committee. We realize that there will be intense competition for available state dollars and that many program decisions will be necessary on the part of the executive and legislative branches. We feel confident that this request will receive full and fair consideration in view of the increasing importance of Maine's marine resources to the state's economy.

VOL/bj

cc: Rodney Scribner/John King-Annee Tara/Lawrence Greenlaw/Spencer Fuller/Sen. Chapman/Rep. Post/Jon Hull

SELECT MARINE RESEARCH COMMITTEE
PART II BUDGET DATA SUMMARY

| Account No. | Total Comm. Request FY 80 | Total Comm. Request FY 81 | To Be Funded by DMR Revenue FY 80 | To Be Funded by DMR Revenue FY 81 | General Fund Request FY 80 | General Fund Request FY 81 |
|---|---|---|---|---|---|---|
| 1140.1001 | | | | | | |
| P.S. | (2) 18,900 | (4) 38,600 | ---- | ---- | (2) 18,900 | (4) 38,600 |
| A.O. | 50,000 | 100,000 | ---- | ---- | 50,000 | 100,000 |
| CAP. | 2,500 | 2,600 | ---- | ---- | 2,500 | 2,600 |
| | 71,400 | 141,200 | | | 71,400 | 141,200 |
| 1140.3100 | | | | | | |
| P.S. | (1) 8,322 | (4) 39,815 | (1) 8,322 | (1) 8,717 | ---- | (3) 31,098 |
| A.O. | 22,000 | 22,400 | ---- | ---- | 22,000 | 22,400 |
| CAP. | 4,619 | 4,964 | ---- | ---- | 4,619 | 4,964 |
| | 34,941 | 67,179 | 8,322 | 8,717 | 26,619 | 58,462 |
| 1140.3210 | | | | | | |
| P.S. | (20) 276,927 | (20) 291,861 | ---- | ---- | (20) 276,927 | (20) 291,861 |
| A.O. | 71,054 | 81,208 | ---- | ---- | 71,054 | 81,208 |
| CAP. | 62,945 | 44,985 | ---- | ---- | 62,945 | 44,985 |
| | 410,926 | 418,054 | | | 410,926 | 418,054 |
| 1140.3310 | | | | | | |
| P.S. | (7) 85,852 | (7) 90,034 | (2) 24,837 | (2) 26,052 | (5) 61,015 | (5) 63,982 |
| A.O. | 27,964 | 36,000 | ---- | ---- | 27,964 | 36,000 |
| CAP. | 29,929 | 19,065 | ---- | ---- | 29,929 | 19,065 |
| | 143,745 | 145,099 | 24,837 | 26,052 | 118,908 | 119,047 |
| 1140.3585 | | | | | | |
| P.S. | ---- | ---- | ---- | ---- | ---- | ---- |
| A.O. | 21,000 | 20,000 | 21,000 | 20,000 | ---- | ---- |
| CAP | 6,000 | 10,000 | 6,000 | 10,000 | ---- | ---- |
| | 27,000 | 30,000 | 27,000 | 30,000 | | |
| 1140.3610 | | | | | | |
| P.S. | (3) 34,038 | (3) 35,635 | ---- | ---- | (3) 34,038 | (3) 35,635 |
| A.O. | 16,381 | 31,500 | ---- | ---- | 16,381 | 31,500 |
| CAP. | 33,819 | 41,500 | ---- | ---- | 33,819 | 41,500 |
| | 84,238 | 108,635 | | | 84,238 | 108,635 |
| TOTALS SUMMARY | | | | | | |
| P.S. | (33) 424,039 | (38) 495,945 | (3) 33,159 | (3) 34,769 | (30) 390,880 | (35) 461,176 |
| A.O. | 208,399 | 291,108 | 21,000 | 20,000 | 187,399 | 271,108 |
| CAP. | 139,812 | 123,114 | 6,000 | 10,000 | 133,812 | 113,114 |
| | 772,250 | 910,167 | 60,159 | 64,769 | 712,091 | 845,398 |

UMBRELLA: 13 DEPARTMENT OF MARINE RESOURCES
UNIT: 188. DEPARTMENT OF MARINE RESOURCES

PROGRAM: 0258 BUREAU OF ADMINISTRATION
APPROP: 1140.1 ADMINISTRATION

# PROPOSAL FOR A NEW OR EXPANDED ACTIVIT

| PROPOSED NEW OR EXPANDED ACTIVITY | PRIORITY # | PROPOSED EXPENDITURE LEVEL | |
|---|---|---|---|
| | | PROPOSED FOR -80 | PROPOSED FOR -81 |
| Activity 1001 | | | |
| Personal Services | | (2) 18,900 | (4) 38,600. |
| All Other | | 50,000 | 100,000. |
| Capital | | 2,500. | 2,600. |
| TOTAL $ | | 71,400. | 141,200. |

DEPARTMENT HEAD'S EVALUATION OF THE REAL BENEFITS TO BE REALIZED IF THE ABOVE ACTIVITIES ARE IMPLEMENTED:

The 108th Legislature established the Select Marine Research Committee to study the general purposes and goals of DMR's research, the present and proposed five-year research plan, a budget for that plan, present and proposed legislative authorization, principals of priority, and the relationship between public and private marine research facilities in Maine. A final detailed committee report is nearly complete and will be presented to the Governor and Legislature in the very near future as a companion document to this DMR Part II budget request. This request is presented in cooperation with the Select Marine Research Committee for the purpose of bringing their findings before you for further consideration within the Governor's total program for the next biennium. This budget request represents our General Fund requirements to implement the Committee's plan. Please refer to the covering memo of January 23 and the Committee Report for full details of the total program.

This portion of the total request package will provide for the establishment of four Regional Centers, two in each year. These Centers will be multi-purpose and serve as a coastal regional headquarters and base for appropriate DMR activities.

UMBRELLA: 13 DEPARTMENT OF MARINE RESOURCES
UNIT: 188 DEPARTMENT OF MARINE RESOURCES

# PROPOSAL FOR A NEW OR EXPANDED ACTIVITY

PROGRAM: 0027 BUREAU OF MARINE SCIENCES
APPROP: 1140.3 MARINE SCIENCES (RESOURCE SERVICES)

| PROPOSED NEW OR EXPANDED ACTIVITY | PRIORITY # | PROPOSED EXPENDITURE LEVEL PROPOSED FOR -80 | PROPOSED FOR -81 |
|---|---|---|---|
| Activity 3310 | | | |
| Personal Services | | (5) 61,015. | (5) 63,982. |
| All Other | | 27,964. | 36,000. |
| Capital | | 29,929. | 19,065. |
| TOTAL $ | | 118,908. | 119,047. |

DEPARTMENT HEAD'S EVALUATION OF THE REAL BENEFITS TO BE REALIZED IF THE ABOVE ACTIVITIES ARE IMPLEMENTED:

The 108th Legislature established the Select Marine Research Committee to study the general purposes and goals of DMR's research, the present and proposed five-year research plan, a budget for that plan, present and proposed legislative authorization, principals of priority, and the relationship between public and private marine research facilities in Maine. A final detailed committee report is nearly complete and will be presented to the Governor and Legislature in the very near future as a companion document to this DMR Part II budget request. This request is presented in cooperation with the Select Marine Research Committee for the purpose of bringing their findings before you for further consideration within the Governor's total program for the next biennium. This budget request represents our General Fund requirements to implement the Committee's plan. Please refer to the covering memo of January 23 and the Committee Report for full details of the total program.

This General Fund portion of the total requested for the Resources Division will provide Marine Resources Scientists, Specialists and Technicians plus related costs of travel, supplies and essential equipment needed in the following program sections: Shellfish Survey, Pollution and Pesticides; Pathology; and Environmental Contamination. Two additional personnel will be provided by revenue funds.

UMBRELLA: 13 DEPARTMENT OF MARINE RESOURCES
UNIT: 188 DEPARTMENT OF MARINE RESOURCES

# PROPOSAL FOR A NEW OR EXPANDED ACTIVIT

PROGRAM: 0027 BUREAU OF MARINE SCIENCES
APPROP: 1140.3 MARINE SCIENCES (BASIC BIOLOGY)

| PROPOSED NEW OR EXPANDED ACTIVITY | PRIORITY # | PROPOSED EXPENDITURE LEVEL PROPOSED FOR -80 | PROPOSED FOR -81 |
|---|---|---|---|
| Activity 3610 | | | |
| Personal Services | | (3) 34,038. | (3) 35,635. |
| All Other | | 16,381. | 31,500. |
| Capital | | 33,819. | 41,500 |
| TOTAL $ | | 84,238. | 108,635. |

DEPARTMENT HEAD'S EVALUATION OF THE REAL BENEFITS TO BE REALIZED IF THE ABOVE ACTIVITIES ARE IMPLEMENTED:

The 108th Legislature established the Select Marine Research Committee to study the general purposes and goals of DMR's research, the present and proposed five-year research plan, a budget for that plan, present and proposed legislative authorization, principals of priority, and the relationship between public and private marine research facilities in Maine. A final detailed committee report is nearly complete and will be presented to the Governor and Legislature in the very near future as a companion document to this DMR Part II budget request. This request is presented in cooperation with the Select Marine Research Committee for the purpose of bringing their findings before you for further consideration within the Governor's total program for the next biennium. This budget request represents our General Fund requirements to implement the Committee's plan. Please refer to the covering memo of January 23 and the Committee Report for full details of the total program.

Under the DMR's Bureau of Marine Sciences, the Basic Biology Division will carry out work through two sections: Environmental Monitoring and Life History Studies. Details of the work to be done are explained in the Committee Report. Three new Marine Resources Specialists plus related All Other and Capital items are included.in this request.

UMB ..LA: 13 DEPARTMENT OF MARINE RESOUR
UNIT: 188 DEPARTMENT OF MARINE RESOURCES

# PROPOSAL FOR A NEW OR EXP..DED ACTIVIT

PROGRAM: 0027 BUREAU OF MARINE SCIENCES
APPROP: 1140.3 MARINE SCIENCES (SCIENCES ADMINISTRATION)

| PROPOSED NEW OR EXPANDED ACTIVITY | PRIORITY # | PROPOSED EXPENDITURE LEVEL PROPOSED FOR -80 | PROPOSED FOR -81 |
|---|---|---|---|
| Activity 3100 | | | |
| Personal Services | | ---- | (3) 31,098. |
| All Other | | 22,000. | 22,400. |
| Capital | | 4,619. | 4,964. |
| TOTAL $ | | 26,619. | 58,642. |

DEPARTMENT HEAD'S EVALUATION OF THE REAL BENEFITS TO BE REALIZED IF THE ABOVE ACTIVITIES ARE IMPLEMENTED:

The 108th Legislature established the Select Marine Research Committee to study the general purposes and goals of DMR's research, the present and proposed five-year research plan, a budget for that plan, present and proposed legislative authorization, principals of priority, and the relationship between public and private marine research facilities in Maine. A final detailed committee report is nearly complete and will be presented to the Governor and Legislature in the very near future as a companion document to this DMR Part II budget request. This request is presented in cooperation with the Select Marine Research Committee for the purpose of bringing their findings before you for further consideration within the Governor's total program for the next biennium. This budget request represents our General Fund requirements to implement the Committee's plan. Please refer to the covering memo of January 23 and the Committee Report for full details of the total program.

This General Fund portion provides for clerical support, a librarian, and a draftsman in the second year; plus related supplies, equipment, subscription funds and materials for both years. The balance of this request is being funded from revenue accounts.

UMBRELLA: 13 DEPARTMENT OF MARINE RESOURCES
UNIT: 188 DEPARTMENT OF MARINE RESOURCES

# PROPOSAL FOR A NEW OR EXPANDED ACTIVIT

PROGRAM: 0027 BUREAU OF MARINE SCIENCES
APPROP: 1140.3 BUREAU OF MARINE SCIENCES (ASSESSMENT)

| PROPOSED NEW OR EXPANDED ACTIVITY | PRIORITY # | PROPOSED EXPENDITURE LEVEL PROPOSED FOR -80 | PROPOSED FOR -81 |
|---|---|---|---|
| Activity 3210 | | | |
| Personal Services | | (20) 276,927. | (20) 291,861. |
| All Other | | 71,054. | 81,208. |
| Capital | | 62,945. | 44,985. |
| TOTAL $ | | 410,926. | 418,054. |

DEPARTMENT HEAD'S EVALUATION OF THE REAL BENEFITS TO BE REALIZED IF THE ABOVE ACTIVITIES ARE IMPLEMENTED:

The 108th Legislature established the Select Marine Research Committee to study the general purposes and goals of DMR's research, the present and proposed five-year research plan, a budget for that plan, present and proposed legislative authorization, principals of priority, and the relationship between public and private marine research facilities in Maine. A final detailed committee report is nearly complete and will be presented to the Governor and Legislature in the very near future as a companion document to this DMR Part II budget request. This request is presented in cooperation with the Select Marine Research Committee for the purpose of bringing their findings before you for further consideration within the Governor's total program for the next biennium. This budget request represents our General Fund requirements to implement the Committee's plan. Please refer to the covering memo of January 23 and the Committee Report for full details of the total program.

This Assessment Division request contains what is considered essential for programs within the following sections: Biostatistics; Survey & Tagging; Age & Growth; and Population Dynamics. As described in the Committee Report details, personnel will include programmers, data specialists, scientists with special expertise, boat personnel and other essential support staff along with related travel costs, supplies and a wide variety of equipment.

Appendix V.

AN ACT to Provide for Oversight of Marine Research by the Department of Marine Resources.

Be it enacted by the People of the State of Maine, as follows:

12 MRSA §6024, sub-§5, is enacted:

5. Research oversight. The Commissioner shall annually report to the Council on the research of the Department. The report shall include the present research plan and its implementation, any necessary revision of the plan, and its necessary extension over the planning period. The Council shall appoint three marine scientists, who are not employees of the Department, to advise it in considering the research plan. After completing its review, the Council shall report the plan, and any recommendations or comments, to the Legislature.

STATEMENT OF FACT

This bill authorizes the Marine Resources Advisory Council to review the Department of Marine Resources' research plan. The Council is required to appoint three non-DMR employees to advise it on this review. Then, the plan and any recommendations and comments are to be reported to the Legislature.

This bill is a recommendation of the Joint Select Committee on Marine Research of the 108th Legislature, as part of its study and Report.

Appendix VI

STUDY ORDER

Whereas, it is important that the State play a positive and forceful role in the implementation of the 200-mile limit and that it improve its management of its own resources; and

Whereas, the state's marine research activities are critical in providing the information to substantiate the state's position in the implementation of the 200-mile limit and to improve its own management; and

Whereas, the salaries and personnel status of the state's scientists and researchers are essential elements in conducting research, and the salaries and personnel status should be reviewed to find out if they are sufficiently competitive and flexible; now therefore, be it

ORDERED, that the Joint Standing Committee on Marine Resources shall study the salaries and personnel status of personnel in the Department of Marine Resources, Bureau of Marine Research; and be it further

ORDERED, that the committee shall take under consideration these problems and report its opinions to the Legislature and to the Governor on or before January, 1981, along with any recommended administrative action and legislation to implement its findings.

Appendix VII

STUDY ORDER

Whereas, the ocean and all its creatures are of great importance to this State; and

Whereas, there is a great deal of marine research conducted in this state, but it is conducted under numerous authorities and at various locations; and

Whereas, coordination of this research and cooperation among the various institutions and scientists would significantly increase the value of the marine research being conducted in the state; now therefore, be it

ORDERED, that the Joint Standing Committee on Marine Resources shall study the marine research being conducted throughout the state, and coordination and cooperation among all public and private research agencies or institutions; and be it further

ORDERED, that the Committee shall take under consideration of all these problems and report its opinions to the Legislature and to the Governor, on or before January, 1981, along with any recommended administrative action and Legislation to implement its findings.

# STATE OF MAINE

APPENDIX VIII

## In House

Whereas, it is important that the State play a positive and forceful role in the implementation of the 200-mile limit; and

Whereas, the State's marine research activities are critical in providing the information to substantiate the State's position in the implementation of the 200-mile limit; and

Whereas, the Department of Marine Resources is developing a 5-year plan of marine research to meet their needs; and

Whereas, it would be beneficial to have the input of the fishing industry and the citizenry of Maine in the development of this plan; now, therefore, be it

Ordered, the Senate concurring, that a Select Committee on Marine Research be established, comprised of 9 members to be constituted and appointed as follows: one member of the Senate to be appointed by the President of the Senate; 2 members of the House to be appointed by the Speaker of the House; 5 members of the fishing industry in this state and one marine scientist, who is not an employee of the Department of Marine Resources, all of whom shall be appointed by joint agreement of the President of the Senate and Speaker of the House; and be it further

Ordered, that the committee meet with the Department of Marine Resources to give advice on the development of its plan for marine research; and be it further

Ordered, that the committee shall consider, among other issues, the research required to implement the 200-mile limit

and to protect the State's interests in that implementation; marine resources and hazards important or potentially important to the State's fisheries, the research that is necessary in these areas over the 5-year period from 1979 to 1984, the specific goals of that research, the procedures for periodic critical review and oversight of that research, and the procedures required to review the goals of the 5-year plan after its adoption; and be it further

Ordered, that the committee shall take under consideration the plan and report the same to the ⟷ Legislature and to the Governor on or before January, 1979, along with any recommended administrative action and legislation to implement its findings; and be it further

Ordered, that the committee shall hold its organizational meeting upon the call of the President of the Senate, and shall choose a chairman from among its membership, and shall organize its study at that time; and be it further

Ordered, that the members of the committee shall serve without compensation, but may be reimbursed for their reasonable expenses in attending meetings, procuring supplies, correspondence and other related and necessary expenditures; and be it further

Ordered, upon passage in concurrence, that a suitable copy of this Order be forwarded to each member appointed to the committee and to the Commissioner of Marine Resources.

IN SENATE CHAMBER
READ AND PASSED BY SEN. SEN. SPEERS OF KENNEBEC

JUL 6 1977

PENDING Passage

IN SENATE
TAKEN FROM TABLE ON MOTION SEN. SPEERS BY SEN. DE KENNEBUNK ON

JUL 11 1977

MOTION BY SEN. SPEERS
INDEFINITELY POSTPONED IN NON CONCURRENCE
SENT DOWN FOR CONCURRENCE

Name: (Post) Bonnie Post and

Town: Owls Head

HP1792