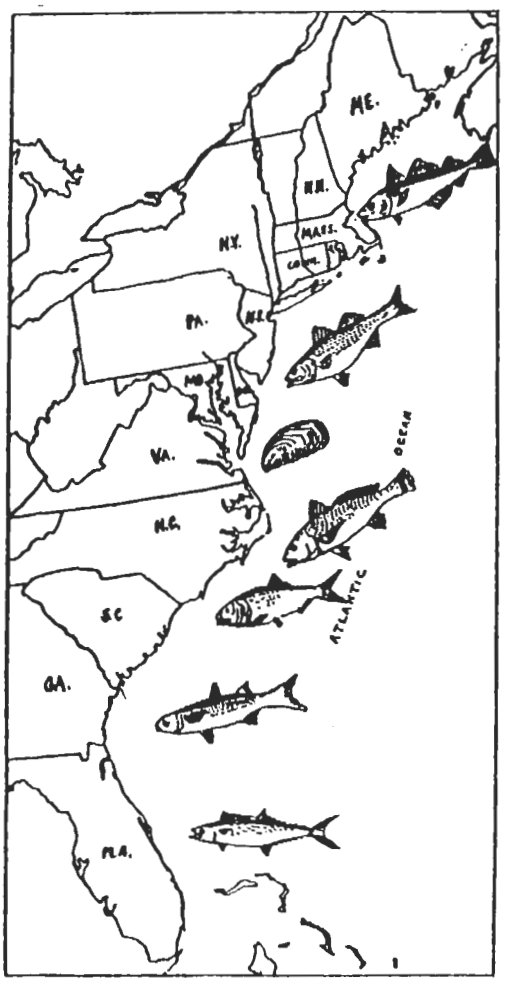
Special Report No. 1

of the

ATLANTIC STATES MARINE FISHERIES COMMISSION



EASTLAND FISHERIES SURVEY OF THE GREAT LAKES

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EASTLAND FISHERIES SURVEY OF THE GREAT LAKES

by W. Mason Lawrence, Consultant:
Natural Resources Management

Prepared for The Atlantic States, Gulf States, and Pacific Marine Fisheries Commissions under the supervision of the Executive Director of ASMFC, pursuant to P.L. 93-433 and S. Con. Res. 11 (93rd Congress, 1st Session, 1973) under National Oceanic and Atmospheric Administration Grant No. 04-5-158-68.

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ATLANTIC STATES MARINE
FISHERIES COMMISSION

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ACKNOWLEDGEMENTS

Many commercial fishermen, recreational fishermen and interested lay persons have contributed comments and suggestions forming the bases for the recommendations in this report. The participants in the Regional Conference held at Traverse City, Michigan (listed in Appendix B) devoted a day and a half to critical review of the recommendations relating to commercial fisheries. The fisheries agencies of the eight Great Lakes States and the Regional Offices of the United States Fish and Wildlife Service and the National Marine Fisheries Service cooperated in the survey. Dr. Stanford Smith, a retired biologist of the National Marine Fisheries Service, and Mr. John Carr, of the Ann Arbor, Michigan office of the National Marine Fisheries Service, assisted in the planning and carrying out of the survey. Mr. Claude Ver Duin, Publisher of *The Fisherman,* and consultant to the Midwest Federated Fisheries Council, participated actively in the conduct of the survey. He assisted with the planning, attended all meetings with commercial fisheries organizations, made personal contacts and published notices and articles on the Eastland Fisheries Survey in *The Fisherman,* including a centerfold questionnaire, which the reader could remove and return.

Coordination of the survey and preparation of this report was done by W. Mason Lawrence, Consultant on Natural Resources Management, Delmar, New York under contract with the Atlantic States Marine Fisheries Commission.

INTRODUCTION

The Eastland Resolution, Senate Concurrent Resolution 11, was unanimously approved by the Congress in 1973. The resolution states, "That it is the policy of the Congress that our fishing industry be afforded all support necessary to have it strengthened, and all steps be taken to provide adequate protection for our coastal fisheries against excessive foreign fishing." Senator Eastland recommended that the three Interstate Marine Fisheries Commissions, The Atlantic States, Gulf States and Pacific, aid the Congress to "gather the facts, the ideas and suggestions, the wealth of information we must obtain from every corner of our country . . . " He then called for a national policy for support of United States fisheries and a plan for implementation of that policy.

The Congress appropriated funds to the Interstate Marine Fisheries Commissions to develop the requisite information. Although a specific appropriation was not made for the Great Lakes, Congress intended that the Great Lakes be included in the study and the three Interstate Marine Fisheries Commissions contributed a portion of their allocations for carrying out the Eastland Fisheries Survey in the Great Lakes.

The procedures employed in making this survey in the Great Lakes are described in the section of this report on "Development of Recommendations." A National Conference will be held in the Washington, D.C. area during the week of November 29 - December 3, 1976 to consider the Eastland Fisheries Survey reports from the Atlantic, Gulf of Mexico, Pacific and Great Lakes areas and to prepare a report to the Congress, including proposals for legislation relating to national fisheries policy and programs. Representatives from the Great Lakes areas were included as working participants in the National Conference.

THE GREAT LAKES

EASTLAND SURVEY AREA

SUMMARY OF RECOMMENDATIONS

1. Early implementation of comprehensive resource assessment to provide information for total resource management.

2. Development of effective management programs, based on the best scientific knowledge, which will provide for optimum resource utilization and which will assure that full benefits will be obtained from interstate, national and international programs for enhancement of fishery resources and environmental improvement.

3. Stronger action to assure compliance with abatement and control of pollution that contaminates fish or that has adverse influence on fish habitat including the prevention of the development of new environmental degradation or fish contamination.

4. Provision of adequate funding for the sea lamprey control program to assure maintenance of a desirable and productive species balance.

5. Limitation of regulations to the minimum required for sound management and promotion of uniform regulations.

6. Development of improvements in harvest technology including boats, gear, and related equipment and operations.

7. Development and improvement of access, harbors and dock facilities for use by commercial and recreational fishermen.

8. Development of domestic and foreign markets for fish species and products currently not fully utilized.

9. Establishment of a financial and technical assistance program for construction or modernization of fish processing facilities.

10. Provision of financial aid and tax relief to assure the strengthening and rehabilitation of the commercial fisheries of the Great Lakes.

11. Increase in extension, research, development, and Sea Grant activities applicable to recreational and commercial fishing.

12. Promotion of quality control programs to protect and promote consumer and producer interests and to increase the market for Great Lakes fish.

13. Congressional action to provide for proper management, allocation and use of those fish resources to which rights are reserved to Indians by treaties.

14. Control of fluctuations in lake levels to minimize damage to fish habitat, docks, boat houses, boats and related facilities.

HISTORY OF GREAT LAKES FISHERIES

Since the beginning of commercial fishing in the Great Lakes in the nineteenth century, there has been a progressive deterioration in the abundance of fish stocks of economically valuable species. The major factors which contributed to this deterioration were: increasingly intensive fishing for selected species; changes in the environment such as erosion and siltation of tributary streams and inshore lake areas, construction of dams in tributaries and the destruction of estuarine areas; pollution, including nutrient loading and reduction of dissolved oxygen; and competition and predation from imvading marine fish.

Selective fishing for the most sought-after species has contributed to the reduction of these species in the Great Lakes. Environmental changes and pollution have had harmful impacts on the fishery resources in local areas of each of the Great Lakes, have had serious effects on the fisheries of Lakes Erie and Ontario and have affected the fisheries of Lake Michigan to a lesser degree.

The smelt, an introduced marine species, is now present in all of the Great Lakes. It first became abundant in the upper Lakes in the 1930's. Although it has not been possible to assess fully the impact of the smelt, it is estimated to have had serious effects on native fish stocks. The most dramatic invasion was that of the sea lamprey which began to exert a strong influence on the fish population of the upper Lakes in the 1940's. The rapid expansion of the lamprey population in Lakes Huron, Michigan, and Superior resulted in the destruction of the native lake trout stocks and serious damage to the deepwater ciscoes, whitefish and lake herring stocks. The alewife, another marine species, followed the lamprey in invading the upper Lakes and apparently has seriously affected the deepwater ciscoes, yellow perch, deepwater sculpin and emerald shiner stocks. Other species not native to the Great Lakes, e.g., the carp and white perch, have become established and undoubtedly affect the native stocks.

Within the past fifteen years another serious problem has arisen to plague the commercial fisheries. With the widespread use of chemicals in agriculture and industry, a number of the most valuable fish species have accumulated sufficient quantities of certain chemicals to make the flesh unfit for human consumption. DDT, mercury, PCB's and Mirex are the chemicals which have caused the major problems to date. Prohibition of the marketing of fish contaminated with these chemicals has had a dramatic effect on the commercial fishing for the affected species.

The effect of the stresses and changes noted above has been to reduce the pounds of fish produced per acre by the commercial fishery. This has resulted in even more drastic reduction of the number of commercial fisheries, since much of the reduced yield consists of species of lower value than those harvested during the period of higher yields. At the same time, with the growing interest and emphasis on outdoor recreation, the amount of recreational fishing for species also taken by commercial fishing has grown rapidly.

PRESENT STATUS OF FISHERIES

COMMERCIAL FISHERIES

Table 1 presents, by lake and states, information provided by the state fishery agencies on the 1975 commercial fisheries in the United States waters of the Great Lakes. As noted previously, the number of licensed commercial fishermen, the amount of fish caught and the value of the catch are all substantially less than during periods when the commercial fishery was generally considered to be in a healthy condition. The data on licensed fishermen give a distorted picture of the active commercial fishing operations since a number of the licensees are part time fishermen, many of whom exert little fishing effort.

TABLE 1

1975 COMMERCIAL FISHERIES

UNITED STATES WATERS OF GREAT LAKES

Lake	Number of Licenses	Principal Species Landed		Total Landings pounds	Total Landings dollar value
Lake Ontario					
New York	26	yellow perch bullheads eels	white perch white bass	248,167	96,255
Lake Erie					
New York	29	yellow perch walleye drum	suckers white bass	373,951	140,169
Pennsylvania	46	walleye yellow perch	white bass emerald shiner	313,054	163,854
Ohio	144	yellow perch carp drum	catfish white bass	7,272,000	1,600,000
Michigan	4	catfish bullheads yellow perch	carp white bass	483,899	41,560
Total	223			8,442,904	1,945,583
Lake Huron					
Michigan	37*	white fish carp yellow perch	catfish suckers	1,726,977	591,303
Lake Michigan					
Michigan	85**	whitefish alewife smelt	chubs round whitefish	7,372,050	1,897,839
Indiana	35	yellow perch lake trout suckers	smelt coho	185,294	134,941
Illinois	19	chubs yellow perch smelt	suckers burbot	240,058	159,766
Wisconsin	308	whitefish yellow perch chubs	carp alewives	37,322,000	2,296,715
Total	447			45,119,402	4,489,261

Table 1, continued

Lake	Number of Licenses	Principal Species Landed		Total Landings pounds	Total Landings dollar value
Lake Superior					
Michigan	37	chubs whitefish lake trout	herring suckers	1,819,272	945,231
Wisconsin	20	whitefish chubs lake trout	herring smelt	1,458,794	559,879
Minnesota	87	smelt herring	chubs	1,288,483	167,778
Total	144			4,566,504	1,672,888
All Lakes Total	873†			60,103,954	8,795,290

* Includes 4 fishermen who also fish Lake Michigan.
** Includes 4 fishermen who also fish Lake Huron.
† 4 licensees who fish both Lakes Michigan and Huron counted only once.

RECREATIONAL FISHERIES

Information on the 1975 recreational fisheries in the United States waters of the Great Lakes, as provided by the State fishery agencies, is given in Table 2. The number of recreational fishermen and the amount of recreational fishing effort are large and increasing. Some of the recreational fishing is directed at species not taken by commercial fishing, e.g., smallmouth bass, largemough bass, rainbow trout, and brown trout. Recreational fishermen do take substantial amounts of species which are also subject to commercial fishing, such as yellow perch, walleyes, bullheads, white bass, white perch and rock bass. The introduction of Pacific salmon and the stocking of other salmonoids, rainbow trout, brown trout, and splake, have resulted in major recreational fisheries for these species. Lake trout supported the most valuable commercial fishery in Lakes Huron, Michigan and Superior until the native stocks were destroyed by sea lamprey predation. Commercial exploitation of lake trout has been prohibited during the course of the program to rehabilitate lake trout by control of the lamprey and the stocking of hatchery reared lake trout. A significant recreational fishery for lake trout has developed as the trout population resulting from stocking has built up.

OUTLOOK FOR GREAT LAKES FISHERIES

The many problems besetting the fisheries of the Great Lakes can be effectively ameliorated if not eliminated, even with the limits of present knowledge and technology. In fact, progress is being made in dealing with these problems, but it is too slow in view of the potential economic and recreational value of improved fisheries. Selective harvesting of valuable species to the point of over exploitation can be controlled by State regulation of seasons, size limits, methods of taking and fishing effort. For those stocks which we share with our Canadian neighbor, coordinated regulations can be developed jointly to prevent over exploitation.

Federal and State laws and regulations are available, if properly supported and enforced, to prevent most of the controllable damage to the environment. Unfortunately, some of the past damage cannot be undone, and some of it will take a long time to repair, whether by man or by natural processes.

Progress has been made in pollution control through the joint program of the United States and Canada under the direction of the International Joint Commission. Present water quality can be improved and future deterioration prevented by intensification of the present program and by implementation of an effective toxic substance control program.

The joint United States and Canada sea lamprey control program carried out by the Great Lakes Fishery Commission has reduced the lamprey population to an estimated ten to twenty percent of its peak abundance and has permitted the reestablishment of sizeable populations of lake trout and the maintenance of populations of other salmonoids by stocking of hatchery-reared fish. The success of the program in establishing populations of lake trout that are self sustaining through natural reproduction is not known at present. Possibilities exist and are being explored to develop more effective and perhaps less costly means of lamprey control. It may also be possible, through management measures, to increase the numbers of large predatory fish to exert control over the introduced alewife and smelt and thus improve conditions for more desirable native species.

To solve these problems and to attain the overall goal of improved fisheries, it will be necessary to develop coordinated management programs for the fisheries, involving much more intensive management than has been carried out in the past. A stock of fish occuring in several jurisidictions cannot be properly managed by independent programs of each jurisdiction. Similarly, there are

TABLE 2

1975 RECREATIONAL FISHERIES

UNITED STATES WATERS OF GREAT LAKES

Lake	Estimated Number of Anglers	Principal Species Caught	
Lake Ontario			
New York	850,000	yellow perch bullheads smallmouth bass	northern pike largemouth bass
Lake Erie			
New York	150,000	yellow perch brown trout smallmouth bass	coho walleye
Pennsylvania	150,000	yellow perch walleye smallmouth bass	northern pike muskellunge
Ohio	300,000	yellow perch white bass	drum
Michigan	186,320*	yellow perch walleye bass	northern pike suckers
Total	786,320		
Lake Huron			
Michigan	221,170	yellow perch chinook northern pike	bass walleye
Lake Michigan			
Michigan	293,250	yellow perch coho rainbow trout	chinook lake trout
Indiana	100,000	coho brown trout rainbow trout	lake trout chinook
Illinois	70,000	coho rainbow trout smelt	yellow perch chinook
Wisconsin	325,000	chinook coho lake trout	brown trout rainbow trout
Total	788,250		

Table II, continued

Lake	Estimated Number of Anglers	Principal Species Caught	
Lake Superior			
Michigan	56,270	lake trout coho rainbow trout	yellow perch northern pike
Wisconsin	30,000	lake trout brown trout rainbow trout	brook trout coho
Minnesota	21,000	lake trout coho rainbow trout	brown trout pink salmon
Total	107,270		
All Lakes Total	2,753,010		

* Total for Lakes Erie and St. Clair.

complex interrelationships among different stocks of fish, and a given stock cannot be managed in isolation. Neither can the major problems facing the fisheries be solved by independent and separate actions by the different jurisdictions. Institutional arrangements need to be developed to assure coordinated action among the States and the Federal Government in the United States and Canadian agencies.

Especially pertinent to the Eastland Fisheries Survey is the clear implication that the Federal Government and the States will have to change, and, in many areas, expand their programs and efforts to provide the means for improving the fisheries of the Great Lakes. Recommendations as to specific actions needed, in the judgment of the commercial and recreational fishermen, the State fisheries agencies and the concerned public, are set forth in this report.

DEVELOPMENT OF RECOMMENDATIONS

PLANNING

The Eastland Fisheries Survey was initiated in the Great Lakes at a meeting on October 23, 1975 in Detroit, Michigan, attended by representatives of seven of the eight state fishery agencies, the United States Fish and Wildlife Service, National Marine Fisheries Service, Great Lakes Fishery Commission and the Midwest Federated Fisheries Council. Plans were developed for obtaining information from commercial and recreational fishermen, associated industries and state fishery agencies; and for providing an opportunity for concerned groups and individuals to make an input to the survey.

COMMERCIAL FISHERIES

During the period January through May 1976, meetings were held with the Michigan Fish Producers Association, Minnesota Fish Producers Association, Ohio Commercial Fishermen, and the Wisconsin Fisheries Council. Individual contacts were made with commercial fishermen in Illinois, Indiana, Pennsylvania and in New York (on both Lake Erie and Lake Ontario).

In addition to the comments and recommendations received from the fishermen attending the meetings and those contacted, each of these fishermen was provided with a questionnaire (see Appendix A) on which he could furnish further information. A copy of this questionnaire was also sent to all licensed commercial fishermen on the Great Lakes. The questionnaire and an explanation of the Eastland Fisheries Survey were included in Volume 28, Number 4 of *The Fisherman,* published in April, 1976, by the Marine Publishing Company of Grant Haven, Michigan. This publication has a circulation of 1,500 among commercial fishermen, the fishery industry, and persons interested in the fisheries of the Great Lakes. Its readers were invited to complete and return the questionnaire. A total of 57 completed questionnaires were received as a result of these distributions.

The information obtained from the meetings, contacts and completed questionnaires was summarized in 24 preliminary recommendations. A Regional Meeting of representatives of the commercial fishermen of the five Great Lakes, the United States Fish and Wildlife Service and the National Marine Fisheries (see Appendix B) was held at Traverse City, Michigan, on June 16 and 17 to review these preliminary recommendations and to develop a consensus on the recommendations to be made to the National Conference. The participants in the Regional Meeting were divided into five subgroups to provide opportunity for detailed evaluation of the preliminary recommendations. The comments and recommendations of the five subgroups were reviewed by the entire group during the last half-day of the Regional Meeting. The recommendations proposed at the Regional

Meeting were circulated to all participants in the Regional Meeting, to the heads of the fishery agencies of the eight Great Lakes States, and to the regional offices of the United States Fish and Wildlife Service and the National Marine Fisheries Service for further review.

RECREATIONAL FISHERIES

Information on recreational fisheries was obtained from contacts with individual fishermen, officers of sport fishing organizations and state fishery agencies. The suggestions received from the recreational fishermen were distributed to representatives of sport fishing organizations who had expressed a specific interest and to state fishery agencies for comment.

PUBLIC

In addition to receiving comments from those involved or interested in commercial and recreational fisheries, an opportunity was provided to the general public to participate in the Eastland Fisheries Survey. The main points expressed by this group were: interest in the general welfare of the fish resources; opposition to dredging, disposal of dredged material, filling, and other practices that adversely affect the habitat; and serious concern about pollution and the continued contamination of the sediments, food chain, and food fish with toxic chemicals.

STATE FISHERY AGENCIES

As previously noted, the State Fishery agencies were involved in planning the Eastland Fisheries Survey of the Great Lakes. The recommendations received from the commercial and recreational fishermen were submitted to the State agencies for review and comment. A questionnaire prepared for State agencies (see Appendix C) was completed by each of the eight State fishery agencies. The agencies were also asked to submit any additional comments or recommendations they wished.

RECOMMENDATIONS

These recommendations are the end products of the reviews and evaluations described earlier in the report. The substance of most of the recommendations was concurred in by all interested parties, i.e., commercial and recreational fishermen, state fishery agencies, and the concerned public. In those instances where a recommendation is of specific or major interest to one group, it is documented in the discussion following the recommendation.

The recommendations are listed in a general order of priority; those listed first are considered to have a higher priority than those listed later. However, the groups who developed these recommendations found it impractical to establish an absolute order of priority among them.

1. *Early implementation of comprehensive resource assessment to provide information for total resource management.*

   Adequate assessment of the status of fish stocks on a timely basis is essential for effective management of the fisheries and to permit meaningful evaluation of the effects of various stresses on these stocks. Such information is needed not only by the fish managers but also by personnel of agencies such as the Environmental Protection Agency and the International Joint Commission whose actions or lack of action may have an important impact on the fisheries.

Considerable assessment work has been and is being done by the Federal Government through the Fish and Wildlife Service and by several of the states. In most instances, such assessments have been undertaken in response to a catastrophic decline in a given fish stock in an attempt to understand and remedy the situation.

A comprehensive program for assessment of important fish stocks which will provide, on a year to year basis, the information needed for management, is a prerequisite for improvement of the fisheries of the Great Lakes. The Fish and Wildlife Service and the states, together with the Canadian agencies where appropriate, should develop and carry out a coordinated assessment program. Such a program will require additional staffing, equipping and funding of the Federal and state agencies involved.

Development of effective management programs, based on the best scientific knowledge, which will provide for optimum resource utilization and will assure that full benefits will be obtained from interstate, national and international programs for enhancement of fishery resources and environmental improvement.

This is obviously a long range goal which cannot be accomplished by a few actions or within a short time. However, steps should be taken promptly on the basis of current information and within existing institutional capabilities to develop management plans, while concurrent efforts are being made to obtain better information and more effective institutional arrangements.

The availability of timely data on the status of fish stocks, the object of the first recommendation, is essential for the development of effective management programs. Reliable information on the kinds and amounts of fish caught and the effort involved in taking them, in both the commercial and recreational fisheries, is also a basic requirement for management programs. Fairly good data are currently being obtained on the commercial fisheries. There is need for improvement, however, in the accuracy and comparability of data between jurisdictions and in timely submission of the data. Comparable data on the recreational fisheries is very limited. For example, the estimated numbers of anglers shown in Table II are based on the observations and judgments of fishery managers, except those for the State of Michigan which were derived from a mail creel census. With the increasing harvests by recreational fishermen, involving some species which are also of importance to the commercial fisheries, the lack of information on the recreational harvest is a major obstacle to effective management. There is an urgent need to develop and implement an efficient system for obtaining reliable statistics on recreational fishing on a lakewide and timely basis. This could be best accomplished through the cooperation and support of the state, provincial and Federal fisheries agencies involved.

Creation of institutional arrangements that will make effective management possible is another major need. At present there are 30 or more governmental units within the United States and Canada which have strong and more or less independent influences on fishery research and management in the Great Lakes. In addition, there are a number of agencies, not directly involved with the fisheries, which may, through the exercise of their responsibilities, affect the fisheries. On the basis of experience gained in bilateral and multilateral agreements for the management of marine fisheries, and marine fisheries management under the Fishery Conservation and Management Act of 1976, efforts should be made to improve institutional arrangements for management of the Great Lakes Fisheries. Cooperation by the Federal

Governments of the United States and Canada, and the state and provincial governments will be needed to accomplish this objective.

There are many elements of management programs which cannot be covered in this report. However, substantial interest was expressed by the commercial fishermen in exploring the desirability of stocking whitefish, herring, lake trout and walleye for commercial harvesting; and by the recreational fishermen in continued stocking of salmon and trout to maintain the sport fishery.

3. *Stronger action to assure compliance with abatement and control of pollution that contaminates fish or that has adverse effect on fish habitat, including the prevention of new environmental degradation or fish contamination.*

Pollution has had drastic effects on the fisheries of the Great Lakes. In Lakes Erie and Ontario, composition of the fish population has been substantially altered as a direct result of pollution. Several valuable species requiring a high water quality have become extinct or have been virtually eliminated. The high level of toxic chemicals in fish has been a problem in all the lakes and has resulted in prohibition of the sale for human consumption of certain species, and warnings against eating more than an occasional meal of a number of species. Recently, New York State prohibited the possession of most species of fish from Lake Ontario because of the level of Mirex they contain.

At present, PCB's and Mirex pose serious problems in Lake Ontario. Mercury contamination of fish is a problem in the western basin of Lake Erie. In Lakes Huron and Michigan, PCB's in fish are a major concern. Items of concern in Lake Superior include accumulation of PCB's and mercury in fish.

Pollution has contributed significantly to the decline and financial problems of the commercial fishing industry. The contamination of food fish has caused a ban on their sale for human consumption. The contamination of fish with toxic chemicals has also reduced the attractiveness of recreational fishing, resulting in adverse effects on communities in which the recreational fishing industry is an important part of its economy. Fish contamination has also resulted in the waste of large amounts of fish caught by recreational anglers. In fact, levels of PCB and Mirex contamination have reached the point where questions have been raised as to the soundness of programs to maintain and increase the trout and salmon populations, the most valuable and highly prized species in the lakes.

Although there may be problems of cost efficiency in some situations, the technology and capability to control existing pollution and to prevent new forms of pollution exist. The accomplishment of these goals, which is essential to the maintenance of healthy and productive fisheries in the Great Lakes, requires that existing programs for identification of the pollution sources, control of pollution, and monitoring of toxic materials be greatly intensified. Specifically, the provision of Federal funding for construction grant programs should be accelerated to permit the completion, on schedule, of already designed pollution control facilities. The 1976 Federal Toxic Substance Control Act should be promptly and effectively implemented to prevent recurrences of PCB and Mirex types of contamination.

Where fishery resources have officially been declared unsafe for human consumption because of environmental contamination, or where consumption has been limited by regulatory agency

fiat; remedial action by responsible Federal and State agencies has been extremely slow. A major cause of inadequate response appears to be the absence of clearly defined responsibility and activity by the primary Federal agencies concerned with contamination of the environment and food; i.e., the US Environmental Protection Agency (EPA) and the US Food and Drug Administration (FDA).

To provide for prompt remedial action necessary to minimize the potential threat to human health, the denial of full use of fishery resources, and the economic hardship endured by beneficiaries of recreational and commercial fisheries activities; when contamination of an area results in contamination of fishery resources in excess of levels considered safe for human consumption, it is recommended that:

(a) Congress direct the Food and Drug Administration to initiate immediate action to determine and publish the nature and extent of the problem by: identifying species and sizes of affected and unaffected organisms; identifying the specific areas where contaminant levels are not considered safe for human consumption; identifying adjacent areas where contaminant levels are considered safe for human consumption; and making news releases to ensure widespread dissemination of all relevant information. The purpose of such action is to prevent unaffected areas and species from being adversely affected by publicity about the problem.

(b) Congress direct the Environmental Protection Agency to begin immediately after notification by FDA of fishery resources with contaminant levels above those considered safe for human consumption to: identify the source(s), extent and degree of contamination, report to Congress at 90-day intervals on remedial action being taken until the problem is satisfactorily alleviated, and, through legal action where appropriate, terminate or decontaminate the source(s) and compensate the parties denied use of fishery resources because of contamination which exceeds levels considered safe for human consumption.

4. *Provision of adequate funding for the sea lamprey control program to assure maintenance of a desirable and productive species balance.*

Twenty-five years' experience with the sea lamprey infestation of the Great Lakes has amply demonstrated the devastating effect that this parasite has had on native populations of lake trout, deep water ciscoes, whitefish and lake herring, and that intensive control programs can keep the lamprey at a level that will permit the reestablishment of sizeable populations of these valuable species. Since its inception in the 1950's the lamprey control program has been funded by the Federal Governments of the United States and Canada through the Great Lakes Fishery Commission.

The lamprey control program has been delayed and on occasion set back by budgetary restrictions. Funding that will assure the present level of lamprey control is basic to the maintenance and improvement of the Great Lakes fisheries. Funding should be continued, also, to support present research to develop more effective, and possibly less costly means of lamprey control.

5. *Limitation of regulations to the minimum required for sound management and promotion of uniform regulations.*

These items are parts of management programs but are treated separately because of their importance to both the commercial and recreational fishermen. At present Great Lakes fisheries are subject to a large number of regulations with a considerable degree of inconsistency among them. Many of these regulations were originally adopted in an attempt to resolve a local problem or in response to a special interest. Such regulations are frequently of no value in promoting sound management of the fisheries.

The present situation makes it difficult for the recreational fishermen to know and comply with the regulations and thus detracts from their enjoyment of fishing. For commercial fishermen, most regulations result in an increase in the cost of doing business and reduce the potential profit of their operations. Most of the regulations are of state or Provincial origin since these are the units of government having jurisidiction over the fisheries. However, regulations administered by Federal agencies such as EPA, FDA, and the Corps of Engineers may pose similar problems, particularly for the commercial fishing industry. All State and Federal agencies exercising regulatory authority affecting the fisheries of the Great Lakes should give increased attention to avoiding inconsistent and overlapping regulations, encouraging uniformity in regulation insofar as is practical, and keeping regulations to the minimum needed to carry out their programs.

6. *Develop improvements in harvest technology including boats, gear and related equipment and operations.*

The Federal Government, through the National Marine Fisheries Service and its predecessors, has devoted considerable funds and effort to gear development and improvements in harvest technology in our marine fisheries. Despite the need in the Great Lakes, similar assistance has not been available to the commercial fisheries of this area. Improvement in harvest technology is urgently needed to increase the productivity of Great Lakes commercial fisheries and to permit fishermen to compete in the market with those fishing in other United States and foreign waters.

There are two aspects of harvest technology in the Great Lakes that require priority attention. Improvement in the commercial fisheries, and probably even continuation of viable commercial fisheries, depend on the development of selective gear that will permit efficient commercial harvest of stocks without significant effect on protected and sub-legal fish. Gill nets, the gear that has been most commonly used, are not considered selective enough by some regulatory agencies to afford protection of stocks of concern to the continually increasing recreational fisheries. The use of a purse seine to take certain species is currently being tested in a project financed by Sea Grant and the industry. This type of development work needs to be continued and expanded.

Secondly, the commercial fisheries of the Great Lakes consist of fishermen operating independently out of a number of ports along the lakes. Technology suitable for large scale operations is often not applicable to this type of operation. There is a real need to develop improved harvest technology for fishermen who are relatively small producers.

Neither the state agencies nor the present industry has the expertise or funds to undertake the needed gear and harvest technology development work. Federal assistance is needed to improve and modernize harvest technology in the commercial fisheries of the Great Lakes.

7. *Development and improvement of access, harbors, and dock facilities for use by commercial and recreational fishermen.*

Lack of suitable access to the lakes affects both commercial and recreational fishing. Prior to World War II, large areas of the lakes were not fished by recreational anglers because their boats were not seaworthy enough to withstand the weather and water conditions of the open areas. Since that time, increased affluence and greater availability of larger craft permit fishermen to fish most areas of the lakes. However, sizeable areas remain little used because of the lack of suitable launching, docking and berthing facilities. Development of boat access has not kept pace with the increase in recreational fishing. As a result, fishermen congregate in areas with suitable access, whereas little use is made of some potentially productive fishing grounds.

Access facilities for commercial fishing vessels has decreased as competition for existing port facilities by commercial traffic has arisen from the St. Lawrence Seaway. Both commercial and recreational shoreline development has further decreased the availability of additional sites. In some situations the only access available to commercial fishermen involves long runs to and from the fishing areas. The present costs of labor and boat operations in such instances add substantially to the cost of commercial production.

Planned programs to provide access where it is now lacking would create better conditions and new opportunities for recreational and commercial fishing. This could be accomplished by expansion of the Federal program for harbors of refuge and of programs for marina development under the Land and Water Conservation Fund. There is also a need for loan guarantees or programs which will enable commercial fishermen who own their dock facilities to repair and modernize their facilities. The current deterioration of these facilities poses restrictions to commercial fishing operations and adds to production costs.

8. *Development of domestic and foreign markets for fish species and products currently not fully utilized.*

Because of the number of small producers involved, their geographical distribution, and the large annual variations in production, there has been little successful market development for Great Lakes fishery products, except for the highly valuable species. Restoration of a healthy commercial fishing industry in the Great Lakes will depend in large part on developing markets for those species produced in abundance and whose production can probably be maintained through better management. At present there is little incentive to harvest these species because they do not bring a price that covers the cost of production.

The Federal Government through the Department of Commerce and the National Marine Fisheries Service has considerable experience in market development which has been made available to marine fisheries in various parts of the country. This assistance should be made available for market development of Great Lakes fisheries products. A financial assistance program may be required during the beginning phase to encourage the harvest and utilization of nontraditional fisheries.

9. *Establishment of a financial and technical assistance program for construction or modernization of fish processing facilities.*

The lack of fish processing facilities in the Great Lakes region is a reflection of the limited markets for fishery products from the lakes other than for fresh fish. Modern, efficient processing facilities are obviously an essential and integral component of a successful market development program. Historically, governmental services and assistance comparable to that furnished other industries, particularly agriculture, have not been available to the fishery

industry. With the present depressed state of the industry in the Great Lakes, technical and financial assistance will be required to provide for the development of needed processing facilities.

10. *Provision of financial aid and tax relief to assure the strengthening and rehabilitation of the commercial fisheries of the Great Lakes.*

Financial aid is included as a possible means of carrying out several recommendations. There are in addition a number of specific financial problems plaguing the commercial fishing industry.

Costs of operations are substantially increased by present restrictions on purchase of foreign boats, duties on foreign-made netting and the Federal Use Tax on private carriers. The restrictions on purchase of foreign-made vessels and the duties on foreign-made netting should be reduced or removed.

Private carriers hauling their own fisheries products should be exempted from the Federal Use Tax.

The fishing industry's ability to recruit and maintain competent staff is adversely affected by inadequate employee benefits for personal injury, health services, hospitalization and retirement. Where insurance coverage is available, the costs are prohibitive. Legislation similar to HR 9716, "Vessel Safety and Fishermen's Benefit Act of 1975," introduced into the 94th Congress, First Session, needs to be enacted to establish a viable fishing industry and to assure fishermen of safe and healthful working conditions.

A major factor contributing to the decline of the commercial fishing industry has been the unavailability of capital. Lending agencies have been hesitant to make loans because of the condition of the fisheries and uncertainty about changes in regulations affecting the fisheries. Since available money has carried a high rate of interest, an expanded program of loan guarantees or assistance is needed to permit the industry to repair, modernize and replace harvesting and processing equipment.

Biological and environmental catastrophes have had severe effects on the commercial and recreational fisheries during the past 25 years. Invasion by marine species, especially the sea lamprey, caused serious depletion of valuable species such as lake trout, herring and whitefish. Pollution undoubtedly contributed to the virtual disappearance of herring, whitefish, and blue pike in Lakes Erie and Ontario. Contamination of fish by DDT, mercury, PCB's and Mirex has resulted in numerous bans on the sale of commercially produced fish and in the case of Mirex contamination of fish in Lake Ontario has resulted in recreational anglers being prohibited from retaining their catch, except for trophy-size fish which may be possessed under a permit for non-consumptive purposes. A program to provide low interest loans is needed to enable commercial fishermen to withstand catastrophes where the effects are of relatively short duration. Where the effects are widespread and of long duration, direct compensation for losses incurred will be required to prevent affected commercial fisheries from going out of business.

Legislation similar to that proposed in S. 3624, the Commercial Fisheries Improvement Fund Act of 1976, would contribute greatly toward providing the financial aid necessary to strengthen the commercial fishing industry.

11. *Increase in extension, research, development and Sea Grant activities applicable to recreational and commercial fishing.*

The States of Michigan, Wisconsin, New York, Minnesota and Ohio have Sea Grant programs. The fishery agencies, and to a certain extent the commerce departments of the eight Great Lakes States carry out research and development programs related to the fisheries of the Great Lakes. Among the current projects are activities directed at: protection of wetland and estuarine areas; development of access facilities; improved marina management; promotion of sport fishing; development of underutilized fish stocks; and development of selective gear for commercial fishing. Much of this work is financed under the Dingell-Johnson Act, the Sea Grant program, the Anadromous Fish Conservation Act, or the Commercial Fisheries Research and Development Act. These Federal programs have contributed significantly to fishery research and development in the Great Lakes and should be adequately funded to provide the additional services needed for improvement of the fisheries.

12. *Promotion of quality control programs to protect and promote consumer and producer interest and to increase the market for Great Lakes fish.*

Present supplies of fisheries products from the Great Lakes, while generally acceptable, are sometimes variable in quality. This situation concerns both the consumer, who is entitled to food that is safe and of acceptable quality, and the producer, whose business depends on consumer confidence in fishery products.

The safety and quality of Great Lakes fisheries products can best be assured by establishment of a comprehensive inspection program. This program should take advantage of existing capabilities in Federal and state agencies and in industry to insure efficient and economical operation. The inspection program should also be implemented in a way that will not disrupt the industry unnecessarily, and should be preceded by a transition period to permit industry to make the needed adjustments. As an interim measure, industry should be encouraged to participate in the U.S. Department of Commerce Voluntary Seafood Inspection Program.

13. *Congressional action to provide for proper management, allocation, and use of those fish resources to which rights are reserved to Indians by treaties.*

In the upper Great Lakes, the exercise of fishing rights by Indian tribes has caused serious concern. Court decisions have increased the legal basis for tribal fishing; at present, Indian rights in many areas supercede the authority of the State to regulate the fishery resources. The result is divided authority in fishery management, which may already be divided among two or more states, and, in addition, in some instances with the Province of Ontario. The divided authority is critical to perpetuating stocks of valuable species which can easily be overfished.

The United States Congress should consider the various Indian treaties with the intent of creating, where needed, appropriate institutional arrangements and authority to conserve the fisheries resources of the Great Lakes while protecting those rights reserved to the Indians.

14. *Control of fluctuations in lake levels to minimize damage to fish habitat, docks, boat houses, boats and related facilities.*

Regulation of the water levels of the Great Lakes comes under the jurisdiction of the International Joint Commission. Present facilities permit regulation of discharges from Lake Superior and Lake Ontario.

Regulating these discharges permits a degree of control over the water levels in the other three lakes. In establishing water level regimens, proper attention should be given to the effect of water levels on fish habitat, boat and dock facilities, as well as on shoreline erosion, navigation, power and other interests, in order to minimize adverse impacts on recreational and commercial fishing.

APPENDIX A

EASTLAND FISHERIES SURVEY

Great Lakes Area

Name _____

Address _____ Phone _____

City _____ State _____ Zip _____

What are your major concerns about problems facing the fishing industry?

What future do you see for the United States fishing industry in the Great Lakes area?

Do you belong to a fisheries organization? If so, which one(s)?

Other comments that you would like to bring to the attention of the Members of Congress?

Do not feel that your answers to these questions, or your comments, must be confined to the space provided. Use as much space as needed to express your views.

APPENDIX B

Persons Participating in
Eastland Fisheries Survey Meeting
Traverse City, Michigan
June 16-17, 1976

Irwin M. Alperin	Executive Director, Atlantic States Marine Fisheries Commission 1717 Massachusetts Ave., N.W. Washington, D.C. 20036
Cheryl Bozorgmanesh	Michigan Sea Grant Program University of Michigan Ann Arbor, Michigan
Galen Buterbaugh	U.S. Fish and Wildlife Service Washington, D.C.
William Cahill, Jr.	Cahill Fisheries Oswego, New York
William Carlson	Vice President, Michigan Fish Producers Association Leland, Michigan
John Carr	National Marine Fisheries Service Ann Arbor, Michigan (Representing William Gordon, Regional Director, National Marine Fisheries Service Gloucester, Massachusetts)
Don Culbertson	U.S. Fish and Wildlife Service Boston, Massachusetts (Representing Regional Director, Howard Larsen)
Bill Daugherty	U.S. Fish and Wildlife Service Twin Cities, Minnesota (Representing Regional Director, Jack Hemphill)
Richard Eichler	Wisconsin Fisheries Council Kenosha, Wisconsin
Everett (Steve) Ellefson	N.E. Wisconsin Consumers Fishery Association Washington Island Wisconsin 54246

Ray H. Full	President, Ohio Commercial Fishermen Kishman Fish Company Vermilion, Ohio
Roy A. Jensen	Secretary-Treasurer, Michigan Fish Producers Association P.O. Box 421 Escanaba, Michigan 49829
Bill Hermes	Michigan Fish Producers Association Garden, Michigan
Harold Gorelick	Union Fish Corporation Chicago, Illinois
Jack Hemphill	Regional Director, U.S. Fish and Wildlife Service Twin Cities, Minnesota
Tom Kelly	Michigan Sea Grant Program University of Michigan Traverse City, Michigan
Roger Kenyon	Pennsylvania Fish Commission P.O. Box 531 Fairview, Pennsylvania 16415
Robert Lang	Lake Superior Fisheries Hancock, Michigan
Howard Larsen	Regional Director, U.S. Fish and Wildlife Service Boston, Massachusetts
Dave N. Martin	U.S. Fish and Wildlife Service Twin Cities, Minnesota
William Pearce	N.Y.S. Department of Environmental Conservation Box 292 Cape Vincent, New York 13618
Dan Rau	Minnesota Fish Producers Association 117 N. 2nd Ave. E. Duluth, Minnesota
Herman Schwarz	President, Midwest Federated Fisheries Council Sheboygan, Wisconsin
Bert Smith	Smith Bros., Fisheries Port Washington, Wisconsin

Stan Smith	National Marine Fisheries Service Ann Arbor, Michigan
Walter Stoddard	President, Michigan Fish Producers Association
Claude Ver Duin	Consultant, Midwest Federated Fisheries Council P.O. Box 658 Grand Haven, Michigan

Notes:

1. **The following persons were present but had to leave prior to the meeting:**

Roger Bodin	Bodin Fisheries Bayfield, Wisconsin
Niles Kevern	Michigan State University East Lansing, Michigan

2. **The following members of the Michigan Department of Natural Resources were present at the June 16 session of the meeting:**

Jack Scott	Asa Wright
Dick Schorfhaar	

APPENDIX C

EASTLAND FISHERIES SURVEY - GREAT LAKES AREA

INFORMATION REQUESTED FROM STATE FISHERY AGENCIES

1. How many commercial fishermen did your Agency license to fish in the Great Lakes Waters of your State in 1975?

2. What were the principal species harvested in each of the Great Lakes in your State by commercial fishermen in 1975?

3. What is your best estimate of the number of recreational fishermen who fished in the Great Lakes waters of your State in 1975?

4. What were the principal species taken by recreational anglers in the Great Lakes waters of your State in 1975?

5. What does your Agency consider to be the major problems involved in establishing and maintaining successful commercial and recreational fisheries in the Great Lakes?

6. What are your Agency's recommendations for changes in or new Federal policies, programs and legislation in relation to the commercial and recreational fisheries of the Great Lakes?