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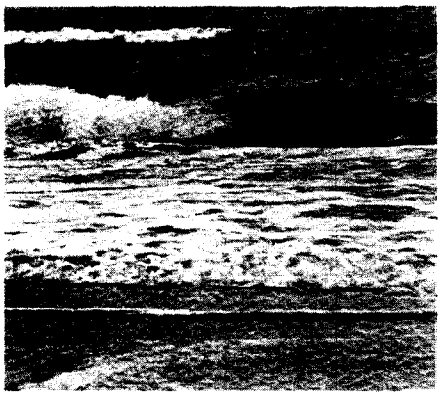
COASTAL FISHERIES MANAGEMENT



IN NORTH CAROLINA

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COASTAL FISHERIES MANAGEMENT
IN
NORTH CAROLINA

by

Michael W. Street

North Carolina Department of

Natural Resources and Community Development

Division of Marine Fisheries

Morehead City, NC 28557

March 1979

Special Scientific Report No. 32

This plan for fisheries management in North Carolina was prepared as part of work funded by North Carolina's Office of Coastal Zone Management Fisheries Assistance Program Grant (Grant No. 04-7-158-44094)

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MARINE AND ESTUARINE FISHERIES MANAGEMENT
IN
NORTH CAROLINA

North Carolina Department of
Natural Resources and Community Development

Division of Marine Fisheries

14 September 1978

This plan for fisheries management in North Carolina was prepared in partial response to requirements for North Carolina's Office of Coastal Zone Management Fisheries Assistance Program Grant (Grant No. 04-7-158-44094)

Approved:

Howard N. Lee, Secretary
Department of Natural Resources and
Community Development

9/28/78
Date

Approved:

Edward G. McCoy, Director
Division of Marine Fisheries

9/14/78
Date

Approved:

J.J. Smith, Chairman
N.C. Marine Fisheries Commission

9-14-78
Date

PREFACE

In September 1977, North Carolina received the Nation's first Coastal Zone Management Fisheries Assistance Program grant. The funds were used to develop fishery management programs in estuarine stock assessment, shellfish management, statistics, and planning. This document is a plan for fishery management in North Carolina. It summarizes the present status of fishery management, including its legal basis, and presents a philosophy of management. Procedures are described for preparation, approval and implementation of North Carolina Fishery Management Plans.

Preparation of this plan was made possible by the assistance of many individuals, in particular: Dennis L. Spitsbergen, Katy West, Connell E. Purvis, Harrel B. Johnson, Fentress H. Munden, Walter F. Godwin, Maury Wolff, Terry M. Sholar, James T. Brown, and R. Douglas Nelson of the Division of Marine Fisheries. Helpful suggestions were also received from several members of the North Carolina Marine Fisheries Commission and the North Carolina Commercial and Sport Fisheries Advisory Committee as well as from the North Carolina Office of Marine Affairs.

This plan has been approved by the Secretary of the North Carolina Department of Natural Resources and Community Development, the Director of the Division of Marine Fisheries, and the North Carolina Marine Fisheries Commission.

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INTRODUCTION

North Carolina is endowed with an abundance of natural resources, including fertile soil, extensive forests, a mild climate, clean air and water, and a vast estuarine system covering more than two million acres. The value of these natural systems is offically recognized in the North Carolina Constitution, which states that "It shall be the policy of this State to conserve and protect its lands and water for the benefit of all its citizenry..." (Art XIV, Sec. 5). The natural resources under public control are considered to belong to all citizens and are administered for the benefit of the entire State, rather than for specific user groups or special interests.

North Carolina's ocean shoreline extends for approximately 315 miles, from the Virginia border near False Cape to the South Carolina line at Little River Inlet (Figure 1). Within the coastal zone are five general estuarine areas: (1) the southern area, from the North Carolina - South Carolina border to White Oak River, is characterized by narrow estuaries dominated by *Spartina alterniflora* marsh, muddy bottom, and diurnal tides of three to five feet. Salinities are generally above 20 parts per thousand (ppt), except in the rivers. This area contains 15 ocean inlets. (2) The central area, from White Oak River to northern Core Sound, includes two large open bodies of water (Core and Bogue Sounds). Diurnal tides are generally less than three feet in amplitude. Sandy bottoms predominate, often covered with eel grass and shoal grass, and salinities are usually above 25 ppt. Four ocean inlets are present in this area. (3) Pamlico Sound, its tributaries, and bordering Juncus marshes, cover well over one million acres, extending from Core Sound to Oregon Inlet. Bottom type varies from muddy to sandy, and salinities range from near zero ppt in the upper tributaries to about 25 ppt near the inlets. Lunar tides are negligible, while wind tides in excess of two feet are not uncommon. Only three major ocean inlets are located in this area. (4) The Albemarle Sound area, extending north and west from Pamlico Sound, occupies almost 600,000 acres of open water, fresh water marsh, and wooded swamps. Wind tides are far important than lunar tides. Salinities are generally less than 5 ppt, and the bottom is generally sandy, with extensive areas of Eurasian watermilfoil in the eastern part of the area. There are no inlets in this area, and exchange with the ocean occurs through northern Pamlico Sound and Oregon Inlet. (5) The Outer Banks technically include all of North Carolina's barrier islands and beaches, but commonly refer only to the barrier islands and beaches from Cape Lookout

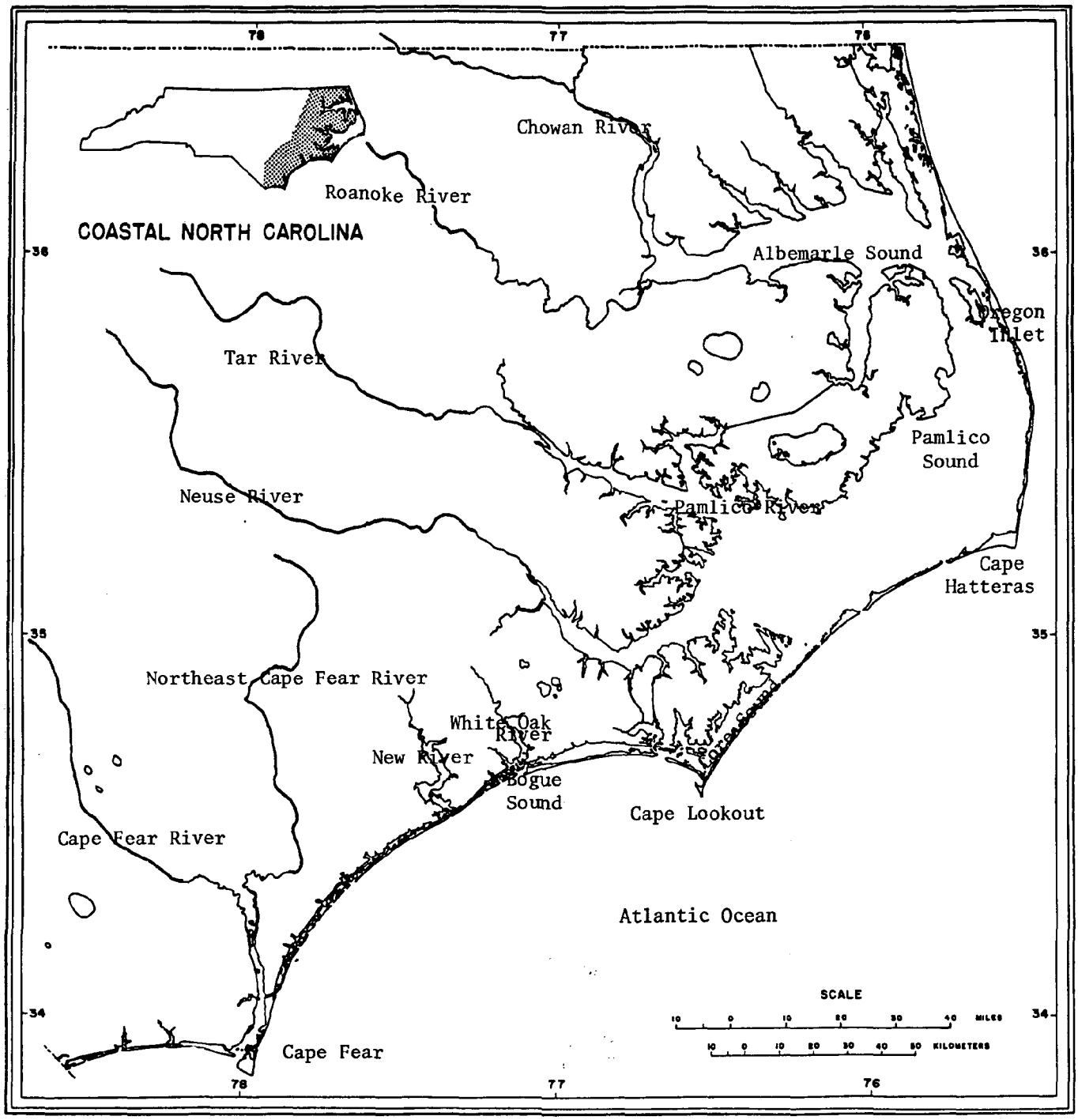

Figure 1.--Coastal North Carolina

north to the Virginia border. The islands are narrow strips of sand surrounded by shallow, high salinity water. Much more affected by the ocean, these waters experience diurnal lunar tides of two to four feet, and the bottom type is generally sandy.

This vast estuarine system has supported generations of coastal residents since colonial times. In recent years, seafood from the coastal area has been enjoyed by consumers all over the eastern United States. In addition, millions of tourist travel to coastal North Carolina annually to enjoy outdoor activities, including fishing, boating, swimming, hiking, and exploring the available unspoiled areas. However, pressures on the lands surrounding the estuaries, on the water itself, and on the fishery resources of the estuaries have increased to the point where important basic decisions must be made concerning proper utilization of the entire estuarine system in order to maintain that system for the use and enjoyment of future generations. This document presents pertinent background information and recommends policies and plans for the long-term management of the marine and estuarine fishery resources of North Carolina.

PRESENT FISHERIES MANAGEMENT SYSTEM

The North Carolina Department of Natural Resources and Community Development, Division of Marine Fisheries (the Division) has the statutory responsibility to manage the State's coastal fisheries and wetland resources to achieve optimum benefits for the citizens of North Carolina. This responsibility is currently being met through programs which manage the shrimp fishery, enhance the oyster fishery through shell planting, gather population dynamics and life history information on anadromous fishes, identify and map critical habitat types (such as spawning and nursery areas), control habitat alteration due to dredge and fill activities, and enforce applicable statutes and regulations.

Legal Basis for Fisheries Management

The General Assembly has enacted various statutes pertaining to conservation of natural resources, including the Environmental Policy Act, Coastal Area Management Act, and others concerning fish and wildlife management and conservation. In 1915, the legislature established the North Carolina Fisheries Commission Board and charged it with stewardship and management of the State's fishery resources, with authority to regulate the fisheries, enforce laws and regulations, operate hatcheries, and carry out shellfish rehabilitation activities. Various governmental reorganizations over the years have resulted in separation of authority for freshwater fisheries (Wildlife

Resources Commission) and estuarine and marine fisheries (Marine Fisheries Commission and Division of Marine Fisheries). The General Assembly has retained the authority to establish license fees for those harvesting and selling seafood and little else. Actual management of the marine fisheries and fishery resources has been delegated to the Marine Fisheries Commission and the Division of Marine Fisheries through the Department of Natural Resourees and Community Development.

Organizational Aspects of Management

GS 143B-286 established the Marine Fisheries Commission, composed of coastal residents and individuals experienced in commercial and recreational fishing, marine ecology, coastal land development, and seafood processing and marketing. The Commission establishes regulations concerning seasons and locations of fishing; methods of fishing; sizes and quantities of fish caught, sold, and transported; and cultivation of shellfish on leased public bottom. Regulations are enacted through established procedures including public hearings, and offical advertisement in newspapers and other media. Total time required for establishment of new regulations or amendment or deletion of present regulations can be less than 30 days. Figure 2 illustrates the steps in formulation of regulations.

Functional Aspects of Management

The Division of Marine Fisheries carries out the day-to-day activities concerned with management of the fisheries. The Law Enforcement Section enforces Commission regulations and state statutes. The Dredge and Fill Management Section protects estuarine habitat by controlling habitat alteration and by providing expert technical assistance to individuals and governmental agencies concerned with coastal planning and development. The Research and Development Section obtains the various kinds of biological, environmental, and population dynamics information needed for making day-to-day fishery management decisions. Of special importance is the authority delegated by the Commission to the Secretary of the Department of Natural Resources and Community Development to take certain management actions upon the advice of the Director of the Division of Marine Fisheries (GS 113-221 (e)). These actions, issued formally as "Proclamations" take effect no less than 48 hours after publication, except for those concerning pollution of shellfish waters which take effect immediately. Proclamations are used to open and close areas and seasons for shrimping, oystering, scalloping, and clamming by mechanical means. For example, proclamations are issued to open areas to shrimp trawling when Division biologists determine through sampling that the shrimp in those areas have reached optimum size and abundance for harvest.

NEED FOR REGULATION

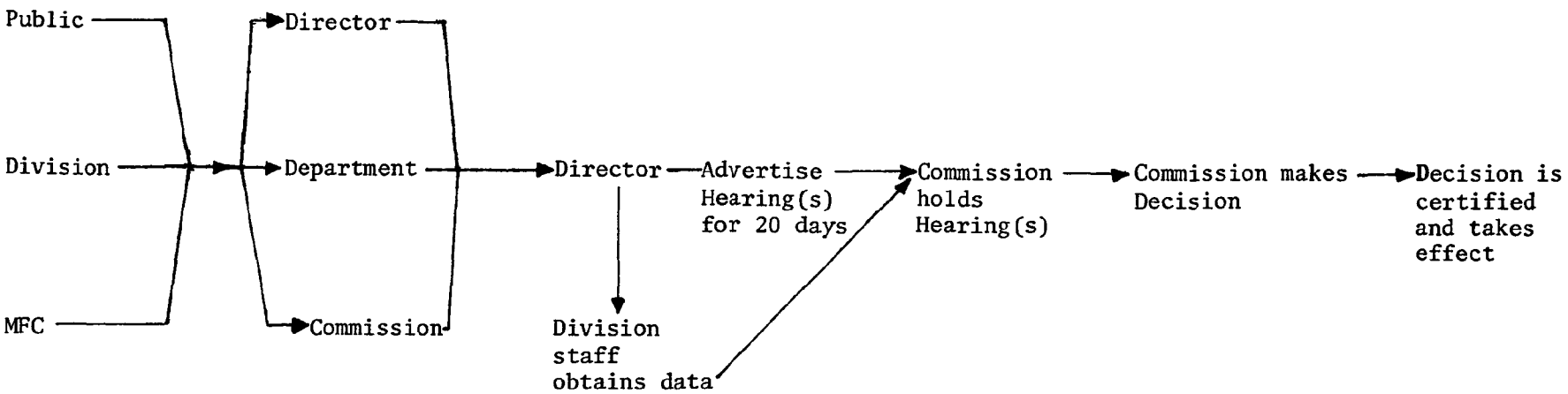

Figure 2.-- Flow chart of Regulation Development and Implementation

The proclamation system thus permits management to react to changing conditions within a very short time span. The procedures for issuing proclamations are illustrated in Figure 3. The current marine fishery management system of North Carolina is rather unique in its ability to react quickly to changing situations within the fisheries and the environment producing those fisheries. With this capability to "fine-tune" goes the responsibility to obtain accurate and timely data on the fisheries in order to reach management decisions in the best interest of the resources and those utilizing the resources.

PHILOSOPHY OF FISHERY MANAGEMENT

"Fishery management" includes all activities concerned with maintenance or improvement of estuarine and marine fisheries and utilization of those resources, including the habitat which produces and makes available fishery stocks for utilization by man. The practical goals of management are biological, economic, and social: to provide products and employment while maintaining (or improving where feasible) the stocks and environment producing the stocks. To achieve these goals two things are needed: (1) various types of biological, economic, and social information, and (2) legal authority to take action based on that information. Together, the Marine Fisheries Commission and the Division of Marine Fisheries have the necessary authority and ability to manage North Carolina's marine and estuarine fisheries for the optimum benefit of all resource users.

In addition to the Commission and Division, a number of other groups contribute to management of North Carolina's marine and estuarine fisheries, principally through research and information dissemination. The Coastal Resources Commission, with its planning and regulatory authority helps protect basic coastal habitat. Sea Grant programs sponsor much-needed research and development work and disseminate information through extension programs. Various public and private universities conduct research which leads to an understanding of the basic processes controlling the coastal environment. National Marine Fisheries Service cooperates with the Division in the collection of statistical information and conducts valuable research on menhaden, recreational fisheries and pollution. A number of private firms are working on product development. Many other examples could be cited. Through direct participation, consultation and other means, the Commission and Division must take all of these activities into account, in addition to information from the fishing industry and consuming public, when reaching management decisions.

The Division excerises its legal authority to protect critical habitat through

NEED FOR PROCLAMATION

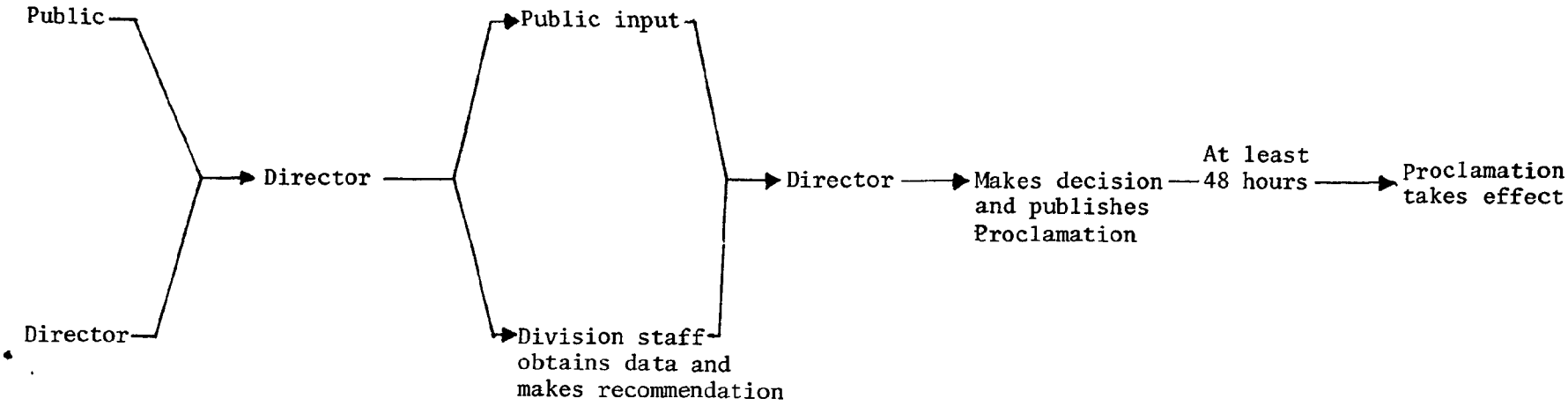

Figure 3.-- Flow Chart for Proclamation

the dredge and fill permit process. Shellfish - producing areas are enhanced through cultch planting. Stock assessment information and statistical data are utilized to formulate and evaluate management decisions, such as when to open and close areas and seasons for certain fisheries.

The long-term goals of the Division's management program are to achieve optimum utilization of the fishery resources and to maintain and promote a viable commercial and recreational fishing industry.

FUNCTION AND GOALS OF EACH SECTION OF THE DIVISION OF MARINE FISHERIES

Successful realization of the above long-term goals depends upon proper coordination between the Division's research, management, and enforcement functions. The research function involves resource data acquisition, analysis, and interpretation. Management utilizes research recommendations in its roles of decision and policy making, environmental alterations control, information and education, promulgation of regulations, development of the fisheries, and enhancement of the resource base. The law enforcement function implements the decisions and regulations of management. These functions are used to maintain the intergrity of North Carolina's fishery resources and the environment upon which these resources depend.

Administrative Section

The Director, Deputy Director, supply warehouse, maintenance staff, and part of the clerical staff are included in this Section. The main Division office is in Morehead City, while the Deputy Director handles personnel, budget, and liason activities from the Raleigh office. The goal of the Administrative Section is to conduct such coordination, planning, personnel, budget, maintenance, purchasing, liason, and other services as are needed to serve the citizens of North Carolina and to permit the other Sections of the Division to reach their individual goals.

Law Enforcement Section

The goals of the Law Enforcement Section are to protect the marine fisheries resources and environment in accordance with North Carolina General Statutes and coastal fisheries regulations; to administer the laws and regulations equally and fairly; and to create and maintain a professional degree of public contact to increase awareness and understanding of marine fisheries laws and regulations.

The Law Enforcement Section includes administrative, aircraft, and district enforcement functions.

The aircraft unit consists of three pilots and two float planes and is responsible for aerial surveillance, enforcement assistance, and aerial photography assistance.

District enforcement is divided into six geographical districts which cover 25 counties and more than two million acres of estuarine waters and marshlands. There are 44 uniformed enforcement officers.

Estuarine Management Section

The State of North Carolina seeks to maintain the naturally high productivity of the marshes and coastal waters which are essential to the continued high yield of fish and shellfish for both commercial and recreational harvest. Dredge and Fill Management Section personnel work toward this goal through the regulation, under statute, of dredging and filling projects, and by participation in shoreline land use planning and coastal area development planning in general.

Dredge and Fill Section personnel review all applications for proposed habitat alteration projects within the legal jurisdiction of the Division of Marine Fisheries. Personnel provide consultation services to dredge and fill aplicants in order to design projects which will have a minimum detrimental effect on the estuarine environment. The review porcess includes site investigation and preparation of formal comments for circulation among various local, state, and federal government review agencies.

The administration of this program, and the extent of local, state, and federal government coordination which has evolved in the North Carolina program, are nationally recognized and have been carried to other coastal states as a model.

Fisheries Services Section

This new section includes recreational fishing development, license sales, administration of shellfish bottom leases, and public information and education activities, including publication of THE TAR HEEL COAST, with a planned circulation of approximately 24,000 copies. This unit brings together a number of services to the public that had previously been relatively "hidden" within the Division. Details of operation and organization will be determined during the first half of fiscal year 1978-79.

Research and Development Section

The mission of the Research and Development section is to obtain, analyze, and interpret resource and fishery data necessary to make timely recommendations and decisions to achieve the Division's goal of optimum utilization of North Carolina's coastal fishery resources, including development of underutilized resources. This Section conducts research and monitoring activities in four program areas: offshore stock assessment, estuarine stock assessment, shellfish management, and statistics

and data analysis.

Personnel of the Offshore Stock Assessment Program conduct oceanic research and monitoring activities which locate new fishing grounds and underutilized stocks, develop new or modified fishing gear, and provide stock assessment data for management and maintenance of North Carolina's offshore fishing industry. Program personnel utilize the R/V DAN MOORE, an 85-foot steel stern trawler, to conduct regular cruises along the North Carolina coast to monitor abundance and distribution of economically-important species and assist in reaching management decisions not only at the State level, but also at the regional and international levels under the Fishery Conservation and Management Act of 1976 (PL 94-265).

Exploratory fishing activities are conducted to permit offshore fishermen to diversify into new fisheries and to relieve fishing pressure on stocks which may be subject to overfishing. As management plans are implemented by the Federal Government under authority of PL 94-265, the Offshore Program will provide key information needed for effective, realistic fishery management on the high seas.

Estuarine Stock Assessment Program personnel conduct long-term stock assessment activities concerning all economically-important finfish and crustaceans, and utilize these data to make timely, objective management recommendations designed to achieve optimum utilization of available resources. The primary goal of this program is to develop an understanding of the fishery stocks and the environmental conditions that influence the stocks so that prediction models may be developed for the management of these stocks. Important use areas, such as spawning and nursery areas, have been identified and mapped for many species in order to prevent alteration or destruction of these areas. Monitoring programs for young-of-the-year have been evaluated and revised in order to achieve greater sampling efficiency. Monitoring of adult finfish and crabs has begun in order to define the relationships between juvenile abundance and availability of adults in the fisheries.

The mission of the Shellfish Management Program is to manage the coastal shellfish resources for optimum utilization and public benefit. Program personnel develop and implement management procedures and mariculture practices designed to enhance the resource base while improving and expanding the fishery.

Program personnel are planning and will soon begin a coastwide bottom survey to determine resource abundance and distribution and status of the stocks, as well as research and monitoring activities to develop optimal management and rehabilitation procedures. Rehabilitation and mariculture activities may be modified as determined by the bottom survey and research results.

The new Statistics and Data Analysis Program is designed to collect, organize, store, retrieve, and analyze pertinent data from the commercial and recreational fisheries (catch, effort, locations, value, etc.) and from Division of Marine Fisheries research and monitoring activities so that this information may be used to reach resource management decisions.

New and improved procedures are being developed and implemented to collect statistical data from the commercial and recreational fisheries via port samplers, trip tickets, log books, and other means. Information will be organized and stored in a computer system so that it may be analyzed by appropriate means to permit identification of such things as trends in fishing activities and catches, importance and value of various fisheries, principal fishing areas, and degree of participation in various segments of the fisheries. A very high priority has been placed on confidentiality of data in order to protect the business interests of the various segments of the fishing industry. Division research and monitoring data will also be placed in the computer system so that these data can be analyzed to aid in reaching resource management decisions.

STATE FISHERY MANAGEMENT PLANS

Introduction

In order to bring about reasonable management of North Carolina's marine and estuarine fishery resources in an orderly, timely, and effecient manner, the Division of Marine Fisheries staff will prepare management plans for those fisheries under Division jurisdiction. Implementation of approved plans will be achieved principally through the Marine Fisheries Commission, with the cooperation of the Coastal Resources Commission, the Wildlife Resources Commission and other agencies, as appropriate. These plans will follow standard formats and, using the best available current information, will strive toward the goal of optimum yield giving due consideration to biological, economic, social, environmental, aesthetic, and other values. The plans will use historic information, identify data gaps, and recommend needed monitoring and research work. As appropriate, modification of regulatory mechanisms will be recommended. Once adopted, through a procedure described below, plans will be periodically reviewed and modified, as needed. The legal framework for fisheries management in North Carolina lends itself easily to plan formulation and implementation via the regulatory authority of the Marine Fisheries Commission. Plan preparation will begin during fiscal year 1978-79. Because of the time required to prepare, review, and implement plans, we anticipate that no more than three plans per year will be produced. A total of 8 years will be needed to prepare the 23 plans identified below.

Interrelationship of Plans

During the plan preparation process, special attention will be paid to the effects of various fisheries upon each other. These effects will be considered in Sections "V.C.", "VII.C.", "XI", and "XII" of the plan outline (below). Regular Division statistical and stock assessment activities will continually acquire data showing the interrelationship of the various fisheries. This information will be used in preparation, implementation, and revision of the plans. The data and analyses will enable fishery managers, including the Department Secretary, the Division Director, and the Marine Fisheries Commission to reach management decisions based on thorough consideration of all available facts. In the optimum yield section of each plan, actual and potential conflicts will be evaluated and recommendations will be made. The Marine Fisheries Commission will continue to exercise its legal authority to resolve conflicts through its regulatory powers.

Standards

In order to evaluate fishery management plans and their probable effects, the following set of standards will apply to all plans. These standards are modified from those contained in the Fishery Conservation and Management Act of 1976 (PL 94-265).

1. Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery.

2. Conservation and management measures shall be based upon the best scientific information available.

3. To the extent praticable, an individual stock of fish shall be managed as a unit throughout North Carolina. In addition, stocks that migrate between North Carolina and other jurisdictions will be managed on a cooperative basis, if suitable management systems can be developed.

4. Conservation and management measures shall, where practicable, promote efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.

5. Conservation and management measures shall take into account and allow for variations among and contingencies within, fisheries, fishery resources, and catches.

6. Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

Management Units

Over the years, many of North Carolina's fisheries have not been specific in what they catch, such as the trawl fisheries; others have used gear that limits the species or size groups that are harvested, such as gill net fisheries; a few have always been specific as to what they take, such as the oyster, clam, scallop, and menhaden purse seine fisheries. During the last few years, as fishermen have become more selective in their choice of target species, they have become more selective in their use of fishing gear. Accordingly, management plans will be species-specific rather than gear-specific. All of the management units designated below, except skates and rays require long-term management because of problems associated with harvesting, environmental relationships, or recent significant declines in landings. The fishery for skates and rays is in early developmental stages. They could be overharvested easily because of their low reproductive capacity.

Designation of Management Units:

American shad and hickory shad
Artificial reefs
Atlantic croaker
Atlantic menhaden
Bay scallops
Blue crabs
Bluefish
Catfish
Clams (Hard and Rangia)
Eels
Flounder
Mullet
Oysters
Red drum
River herring
Sea trout (spotted and weakfish)
Shrimp
Skates and rays
Spanish mackerel
Spot
Striped bass
Sturgeon
White perch

In assigning priorities for plan preparation, several criteria were considered:

1. Status of the stock/fishery - A species exhibiting a sharp decline in reported landings is generally in greater need of management than one not exhibiting such a characteristic.

2. Status of knowledge - Higher priorities were given to species for which there exists sufficient knowledge to implement needed management.

3. Volume and value of reported landings - The more important fisheries are generally subjected to the greatest fishing pressure and have the greatest need for management.

4. Problems/conflicts - Fisheries in which there are frequent, serious conflicts among user groups are more in need of management than those without serious problems.

Plan Development

Information available varies for the management units designated above. In particular, data on economic and sociological factors are almost non-existent. For some species, very little biological information is available. Information on the recreational fisheries is sadly lacking. It is extremely difficult to estimate impacts of proposed management actions on commercial and recreational fishermen, dealers, processors and their employees, as well as consumers of fishery products. Plans will utilize the best available information and note those areas in which data are insufficient for analysis. Long-term R & D Section monitoring programs should help fill in biological data gaps, while the new cooperative statistics program should provide needed data on catch, effort, location and value of fishery products. Experts in economics and sociology will have to be employed or contracts let for their services.

Because of the status of information needed for plan preparation, a definite schedule can be presented only for Fiscal Year 1978-79. During this fiscal year, plans will be prepared for the shrimp, oyster, and bay scallop fisheries. During the spring preceding each fiscal year thereafter, the status of remaining identified management units will be reviewed by the Division and two or three will be selected for plan preparation during the next fiscal year.

Many species landed in North Carolina are taken predominately outside the three mile limit, such as billfish, dolphin, wahoo, black sea bass, scup, snappers, and groupers. These fisheries will be managed by the US Department of Commerce under authority of the Fishery Conservation and Management Act of 1976. It may become necessary for the Division to prepare plans complementary to federal plans for these species sometime in the future.

Other management units may be designated in the future.

Contents of Plans

State Fishery Management Plans will contain at least the information indicated in the following outline. As needed, additional information will be included. This outline was modified from plans now being prepared and implemented under the authority of PL 94-265.

I. Title page
II. Table of Contents
III. Summary
    A. Introduction
    B. Description of stocks
    C. Description of fisheries
    D. Information gaps and actions needed to fill the gaps
    E. Management objectives
    F. Designation of optimum yield
    G. Recommended management actions
IV. Introduction
    A. Legal authority for management
    B. General objectives of the plan
V. Description of the stocks to be managed
    A. Species and distribution
    B. Historical abundance and present condition
    C. Ecological relationships
    D. Estimate of maximum sustainable yield
VI. Description of habitat
    A. Past and present conditions
    B. Identification of critical areas
    C. Relationships between habitat condition and stock abundance
    D. Environmental influences on stock abundance
VII. Description of the fisheries
    A. Past and present commercial fishery
    B. Past and present recreational fishery
    C. Conflicts within the fisheries
VIII. Economics of the fisheries
    A. Commercial
    B. Recreational
IX. Sociological considerations
    A. Past and present social organization of commercial and recreational activities
    B. Community attitudes toward the fishery and management
X. Present laws and regulations affecting the fisheries
    A. North Carolina Statutes
    B. North Carolina Regulations
    C. Other jurisdictions

XI. Determination of optimum yield
  A. Specific management objectives
  B. Description of alternatives for reaching the objectives
  C. Analysis of alternatives and their impacts
  D. Recommended optimum yield

XII. Management actions needed to attain optimum yield
  A. Management options
  B. Analysis of probable biological impacts of management actions
  C. Analysis of probable economic impacts of management actions
  D. Analysis of probable sociological impacts of management actions
  E. Recommended management actions

XIII. Literature Cited

Approval of Fishery Management Plans

Fishery Management Plans will be prepared by the staff of the Division of Marine Fisheries. Outside assistance for particular types of information will be obtained as needed. It must be recognized that FMPs are dynamic entities, subject to periodic review and revision.

As the Division staff completes a given FMP, the plan will be given to the Director who will circulate the plan for review and comment within 60 days by the members of the Marine Fisheries Commission, the Commercial and Sports Fisheries Advisory Committee, the Coastal Resources Commission, the Wildlife Resources Commission, the Division of Environmental Management, the Marine Science Council, the Office of Marine Affairs, and other appropriate agencies. The plans will also be made available for review by interested citizens.

In addition, within the 60 day period, the Division of Marine Fisheries will hold one or more public meetings in affected coastal areas to receive public comment on each plan. Upon review of comments received and modification, if necessary, the Director will approve each plan. He will then forward approved plans to the Marine Fisheries Commission for a resolution of approval and to the Secretary of the Department of Natural Resources and Community Development for his approval.

Upon approval, FMPs will be implemented as soon as possible by the Marine Fisheries Commission (enactement, revision, deletion of appropriate regulations) and by the Division (data collection, research, enhancement projects, etc.).

All Marine Fisheries Commission actions concerning regulations will, of course, go through the normal regulatory process, including official public hearings.

NORTH CAROLINA'S OCZM COASTAL FISHERIES ASSISTANCE PROGRAM AND STATE FISHERY MANAGEMENT PLANS

North Carolina's OCZM Coastal Fisheries Assistance Program grant funds activities in three areas: Estuarine Stock Assessment, Shellfish Management, and Statistics and Data Analysis. In order to have any significant effects, this program must be long-term in nature. State funds are insufficient to support the large scale long-term data gathering activities needed to acquire the population dynamics, life history, and statistical data needed to develop and implement management plans. As data are obtained, they will be used to develop new plans as well as to modify previously-prepared plans. Data will also be used to formulate management recommendations for the Marine Fisheries Commission and for the Director's use in issuing Proclamations. By supporting long-term monitoring and statistics programs with OCZM funds, the Division will be able to use other federal aid monies, such as those provided by PL 88-309, to conduct short-term investigations of specific problems, and to develop and evaluate specific management strategies. Funds will also be used for economic and sociological investigations to provide information for the non-biological portions of management plans.

As information is generated by the activities supported by OCZM grant activities and management plans are developed, the information and plans will be utilized by Division Dredge and Fill Management Section personnel, as well as by others, in evaluation of habitat alteration proposals from private individuals, development companies, and government agencies. The plans will also be presented to various governmental organizations for use in their planning activities, such as the Coastal Resources Commission, lead regional organizations, local planners and (NOAA, NMFS), planning commissions, US Department of Interior, US Department of Commerce (NOAA, NMFS), Army Corps of Engineers, Regional Fishery Management Councils and appropriate agencies of neighboring states which share certain fishery stocks with North Carolina. In particular, Part VI of State Fishery Management Plans will be concerned with identification and protection of environments critical for maintenance of fishery stocks, as well as with environmental influences on stock abundance.

The plans will thus form a significant protion of the information base upon which coastal area planners and coastal zone managers base their plans, projections, and decisions regarding development of the coastal area.

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