

FISHERY MANAGEMENT PLAN
FINAL ENVIRONMENTAL IMPACT STATEMENT
REGULATORY IMPACT REVIEW
FOR
ATLANTIC SEA SCALLOPS (Placopecten magellanicus)



Prepared By
New England Fishery Management Council
In Consultation With
Mid-Atlantic Fishery Management Council
and
South Atlantic Fishery Management Council

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SUMMARY

Introduction

The New England Fishery Management Council and the Assistant Administrator for Fisheries (NOAA) propose to adopt and implement the Final Fishery Management Plan for Atlantic Sea Scallops. The Sea Scallop management program is needed to address resource and management problems which include the variable nature of sea scallop resource abundance, possible excessive levels of fishing effort, and the high potential for overexploitation due to increasing consumer demand. Although there presently is no estimate of absolute abundance of sea scallops, the FMP analyzes abundance indices and recruitment prospects for the Gulf of Maine, Georges Bank/Southern New England and Mid-Atlantic Bight resource areas.

Management Unit

The Management Unit includes all of the populations of sea scallops that occur along the continental shelf of the Northwest Atlantic from the shoreline to the outer boundary of the FCZ and encompasses all commercial and recreational fishing activity affecting those populations. This FMP encourages the adoption of complementary regulations by coastal states to ensure the effectiveness of the management program throughout the management unit.

Objective

The overall objective of the management program is to maximize over time the joint social and economic benefits from the harvesting and use of the sea scallop resource. In support of this overall objective, the Council adopted the following considerations and sub-objectives:

- a. Restoration of the adult stocks in terms of their abundances and age distribution can be expected to reduce the year-to-year fluctuations in stock abundance caused by variation in recruitment.
- b. Enhancement of the yield per recruit for each stock.
- c. Evaluation of the impact of the Plan provisions on research, Plan development and enforcement costs.
- d. Minimization of adverse environmental impacts on stock levels and utilization.

Alternative Strategies for Management

After considering and rejecting the "no action" alternative, as inappropriate given the identified resource problems, the Council evaluated 4 alternative management strategies capable of achieving the adopted management objectives. In brief, these alternative strategies are as follows:

- 1) to control total quantity of sea scallops landed (through, e.g., annual or seasonal quotas);

- 2) to control fishing practices in the sea scallop fishery (through, e.g., gear restrictions, cull size, closed areas and seasons);
- 3) to control fishing effort in the sea scallop fishery (through, e.g., limiting entry, number of vessels, or fishing time); and
- 4) to combine two or more of the above strategies.

Preferred Strategy

It is the Council's judgement after extensive public consideration and detailed analysis (Part 6) that controls on fishing effort and controls on the quantity of sea scallops landed are not practical or technically supportable at this time. Given this judgement, the Council has chosen as the "preferred alternative," controls on fishing practices (through minimum meat count and shell size regulations) along with delayed implementation of additional measures which will limit fishing mortality.

In brief, specific long-term conclusions of an analysis relating to the "preferred alternative" are as follows:

1. Although values of the biological parameters for resource components differ (e.g., growth rate, mortality rate), the analysis demonstrates a consistent increase in individual average sea scallop production (yield per recruit) associated with increases in the size at which the average sea scallop is retained by the fishery, and reductions in fishing mortality to the $F(\max)$ level.
2. Under prevailing exploitation conditions in the sea scallop fishery, an industry average meat count of 30 or 25 relative to 40 will result in significantly greater harvestable yield from all resource components, no matter what the prospects for recruitment happen to be. Further, as meat count in all resource areas is reduced, the productivity benefit associated with meat count becomes less sensitive to increasing fishing mortality (i.e., the resource is naturally buffered to wide-ranging fluctuations in fishing effort). As a result, control on meat count (or size at first capture) appears to be the most practical and efficient control measure for addressing the yield per recruit aspect of the overall management objective in the current resource and management context.
3. The analysis shows that for sea scallops reproductive tissue mass increases markedly as the size of the animal increases (i.e., meat count decreases), particularly during the early years. This general relationship holds for all sea scallop resource components. Assuming egg production is proportional to gonad weight, then management action to increase age at capture (i.e., decrease meat count), may significantly increase the reproductive potential of newly recruited scallops over their life in the fishery.

Management Measure Specification

Therefore, based on this long-term biological analysis (§710) and on an economic analysis (§720) of alternative specifications of the age-at-first-capture measure, the management program adopts a 40 meat count initially with

automatic reduction to 30 meat count after one year, and a corresponding minimum size of 3 1/4" automatically increased to 3 1/2" after one year. The analysis indicates that this target specification of 30 meat count, as a maximum average value, will provide significant long-term benefits in terms of yield-per-recruit and the long-term, overall productivity of the resource. Consequently, the meat count/minimum size measures are expected to make a substantial contribution towards achievement of the management program's overall objective. The program specifies that enforcement of these measures be accomplished through a prohibition against the possession of non-conforming sea scallops up to and including the point of first transaction in the United States. Licensing and reporting requirements are also specified by the program.

Analysis of Impacts

A short-term bio-economic impact analysis of the alternative measure specifications in this FMP was conducted. This analysis provides short-term catch projections, estimated population size structures, and projected scallop populations in specific resource areas in relation to meat count control in the range of 40-25. Utilizing projected catch at size data, weighted average meat counts by resource area were calculated for 1982 and 1983. The highest average meat counts (i.e., smallest average scallop size) are expected to be reflected in the fishery in 1982 on the Northern Edge and Peak (22.1 meats per pound) as a result of recruitment from the relatively strong 1978 year class. These results indicate that the adopted meat counts of initially 40 then 30 included in this management program (reflecting the average in the catch) should not impact sea scallop harvesters who shuck scallops at sea. The calculated estimates reflect the expected average catch situation; depending upon the harvesting strategy pursued by individual fishermen, substantially higher meat counts could result with concentration of effort on beds of newly recruiting scallops.

The specification of the minimum shell height may entail short-term impacts upon some harvesters who do not shuck scallops at sea. For this sector (shell stockers) the expected impact (in terms of percent catch foregone) associated with adoption of a 3.25 inch minimum shell height (corresponding to a 40 meat count) in 1982 and 1983 would be about 3.0% and 2.4% respectively. Higher individual harvester impacts could be expected in areas such as the Northern Edge and Peak where younger age groups are more predominant in the scallop population. The foregone catch impact associated with a 3.5 inch minimum shell height (corresponding to a 30 meat count) would be expected to increase to about 21% in 1982 and about 7% in 1983 for the shell-stocking sector; although, greater individual impacts might again be expected on the Northern Edge and Peak.

Overall, however, and in consideration of the expected contribution to total catch by shell-stocking vessels (16.3%), the adoption of a 40 meat count management measure in 1982, followed by a decrease to 30 meat count after one year, together with their corresponding minimum size specifications for sea scallops landed in the shell, are expected to result in about a half million dollar overall loss to the economy in 1982, and about a 1.5 million dollar overall loss in 1983. These are not considered to represent a significant impact on the overall economy, the overall industry or individual components of the industry.

Management Parameters

OY: Optimum yield is defined as that amount of annual, domestic sea scallop catch that results from implementation of the sea scallop fishery management program.

DAH: Domestic annual harvest is estimated using two independent techniques (\$831).

Interpolation Analysis (\$330)

1982 = 32,500,000 lbs. (14,730 metric tons)

1983 = 32,700,000 lbs. (14,835 metric tons)

Resource Based Analysis (\$712)

1982 = 29,061,000 lbs. (13,182 metric tons)

1983 = 33,984,000 lbs. (15,415 metric tons)

TALFF: The total allowable level of foreign fishing is established as zero.

DAP: Domestic annual processing capacity is estimated to be 60,448,000 lbs. (27,420 metric tons) for 1982 and 61,685,000 lbs. (27,980 metric tons) for 1983.

JVP: Based on the estimates of DAP the Council determines that there should be no opportunity for joint ventures.

Fishery Management Plan
for
Sea Scallops

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PART 1: INTRODUCTION

§110 Overview

The United States has declared management authority over the sea scallop (Placopecten magellanicus) resources that occur in the area designated as the Fisheries Conservation Zone (FCZ). The zone has as its inner boundary the seaward limit of the coastal states and as its outer boundary a line parallel to, and 200 nautical miles from, the baseline from which the territorial sea is measured. This authority became effective on March 1, 1977 pursuant to Public Law 94-265, the Magnuson Fishery Conservation and Management Act (MFCMA or Magnuson Act). Under the FCMA, the United States assumes responsibility for the establishment of management plans and policies, and the enforcement of regulations which implement the provisions of such plans and policies. Fisheries management must be conducted in a manner that will provide the greatest overall benefit to the nation from the harvesting and utilization of those resources.

Pursuant to the MFCMA, the sea scallop resource beyond the territorial seas will be managed according to objectives, policies, and regulations formulated by the New England Fishery Management Council in consultation with the Mid-Atlantic and South Atlantic Fishery Management Councils and approved by the National Oceanic and Atmospheric Administration (NOAA) of the Department of Commerce. In the Sea Scallop Fishery Management Plan (FMP) these objectives and policies are translated into management strategies designed to achieve optimum yield (OY) from the fishery. The optimum yield is based on the best available scientific information; it is sensitive to the potential for overfishing and it incorporates considerations of biological, social, economic, and environmental factors in determining the greatest overall benefit from the scallop fishery.

The FMP also establishes the expected domestic annual harvesting (DAH) from the scallop resources under the jurisdiction of the MFCMA, and in relation to optimum yield and the objectives adopted for management of the resource, defines any surplus that may be made available for harvest by foreign vessels (TALFF). Once in place, the FMP becomes the vehicle by which the Department of Commerce regulates the sea scallop fishery within the FCZ.

§120 Problems and Issues

The decision to develop a management plan for the sea scallop (Placopecten magellanicus) fishery resources in the waters off the Northeast coast of the United States arises from three problems:

- (1) Historically, landings from Georges Bank and the Mid-Atlantic areas have fluctuated. It is believed that high rates of exploitation may increase these fluctuations in the stocks, and in fact high rates of exploitation have typically preceded sharp declines in abundance.
- (2) The ability of these resources to support the current level of effort is questionable. Over the last several years the high abundance of sea scallops in all areas, coupled with increasing market value, have

supported significant increases in fishing effort. In 1978 total removals (U.S. and Canadian) from the overall resource surpassed all historic levels. Data for 1979 and 1980 indicate declines in catch in spite of increases in overall effort.

- (3) Over-exploitation is a danger, in light of anticipated increases in demand. Consumer demand may be expected to support high exvessel prices, and thus, maintain an environment which encourages overexploitation.

The best available evidence suggests that harvests in the foreseeable future cannot be maintained at the 1978/1979 level due to observed declines in stock abundance in many resource areas. Catch data for 1980 support this conclusion. With significantly falling catch rates, it is uncertain whether current levels of effort can continue to be accommodated. In addition, concerns can be justifiably raised with respect to (1) future benefits which may be derived from the sea scallop fishery, and (2) the impact of effort shifting away from scallops onto other commercially valuable species.

§130 Preliminary Specification of the Management Unit

This management plan addresses the sea scallop resource throughout its range in waters under the jurisdiction of the United States. Thus, all of the populations of sea scallops that occur along the continental shelf of the Northwest Atlantic from the shoreline to the outer boundary of the FCZ are included in the management unit. The sea scallop is principally found from the Northeast Peak of Georges Bank westward to the Great South Channel, and southward along the continental shelf of the Mid-Atlantic. However, commercially important resource components also occur within the territorial waters of the State of Maine, the offshore waters of the Gulf of Maine, and in Cape Cod Bay. The management unit, therefore, includes sea scallops in the territorial waters of the States throughout the range of the sea scallop as well as those found in offshore areas.

Four resource components within the management unit may be generally defined. These consist of (1) eastern Georges Bank, focusing principally on the Northern Edge and Northeast Peak of the Bank, (2) western Georges Bank, focusing principally on the Great South Channel, (3) the western Gulf of Maine, and (4) the Mid-Atlantic Bight as far south as North Carolina. Fishing for sea scallops within state territorial waters is not subject to regulation under this FMP; however, State water resources are included within the Management Unit in recognition of market interactions and the need for complementary state management action. Although there is little biological evidence, particularly concerning reproduction, that could serve as a basis for stock separation within the bounds of the resource described, the major resource components of Georges Bank and the Mid-Atlantic may be treated as independent stocks for analysis purposes based upon their geographic separation, historic trends in recruitment, levels of production, and proximity to user groups. Economic interactions and plan implementation considerations, however, argue strongly for uniformity in the management program.