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U.S. New England Groundfish Management Under the Magnuson-Stevens Fishery Conservation and Management Act

STANLEY D.H. WANG
ANDREW A. ROSENBERG
U.S. National Marine Fisheries Service

Introduction

The U.S. New England groundfish fishery exploits demersal marine groundfish resources off the U.S. east coast from Maine to Virginia. This fishery has been an important source of jobs and income for coastal communities in the Northeast region, in particular, New England. However, the fishery resource base has declined to an all-time low in the last three decades. National Marine Fisheries Service (NMFS) research trawl vessel surveys have documented a declining trend in the abundance of this groundfish resource from 1963 to the present (USDC 1995). The potential benefit of successful management is great: “Overall groundfish landings were one-third the maximum sustainable yield (MSY). Landings for haddock and yellowtail flounders were one-tenth the MSY. If the abundance of groundfish were rebuilt to provide MSY, the catch could increase by two to three times with one-half of the present effort” (Anthony 1993). The potential gains in resource rents and consumer benefits from efficient exploitation of the New England groundfish resources by the commercial fishing industries was estimated to be roughly \$130 million and \$20 million a year respectively (Edwards and Murawski 1993).

The New England Groundfish fishery has been managed under the Magnuson Fishery Conservation and Management Act since 1977 (more recently the Magnuson-Stevens Act). While fishery resources have been severely overfished, some important new management actions have been taken in recent years. This article presents a review of the management system of the groundfish fishery to date, with a focus on the role of the overfishing definition and management guidelines. Also included is a description of an economic assistance program that was specifically designed to be parallel to an implementation of a new management system to mitigate the management impact on the industry.

Stanley D.H. Wang and Andrew A. Rosenberg are Supervisory Economist and Regional Administrator, respectively, at the U.S. National Marine Fisheries Service, Northeast Regional Office, Gloucester, MA 01930; e-mail: stanley.wang@NOAA.gov.

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Management System¹

First Groundfish Fishery Management Plan (1977–82)

Under the Magnuson Act, in March 1977, NMFS adopted and implemented the first groundfish Fishery Management Plan (FMP) proposed by New England Fishery Management Council (Council). The management plan included catch quotas for cod, haddock, and yellowtail flounder along with other measures, *e.g.*, minimum fish sizes, minimum mesh sizes and spawning-area seasonal closures. Under this FMP, the number of U.S. vessels increased dramatically as the Magnuson Act eliminated foreign fishing. The increasing number of U.S. vessels caught the quotas rapidly and forced the fisheries to close frequently and for long periods of time.

To prevent extended closure periods and allow small boats to catch their historical share, a system of individual vessel trip limits was added to the catch quotas. Trip limits were eventually abandoned because of wholesale violations and inadequate resources to enforce the management regulations and rules. The industry called for less restrictive regulations devoid of quotas and closures. The Council responded with a new FMP, commonly referred to as the interim groundfish FMP.

Interim Groundfish FMP (1982–86)

In order to mitigate the management problems, the Council began to prepare an interim groundfish FMP in 1980 that was adopted in 1982 for a limited 3-year span, under a premise that a more comprehensive management plan would be developed in the next three years. The interim FMP replaced the catch quotas with minimum fish size and net mesh size regulations for Georges Bank and the Gulf of Maine. Also included was a controlled framework to allow small-mesh fisheries, *e.g.*, whiting and shrimp fisheries, to continue in the Gulf of Maine. The measures proved ineffective with an eventual rise in fishing exploitation, an increase in landings, and a concurrent decline in resource abundance.

Comprehensive Groundfish FMP (1986 to Present)

To follow on the interim FMP, a comprehensive groundfish FMP was implemented in 1986. This groundfish FMP set biological targets in terms of maximum spawning potential (%MSP), based on spawning biomass per recruit analysis. The FMP was also expanded to include more species in the management unit: cod, haddock, pollock, white hake, redfish, winter flounder, winter flounder, American plaice, witch flounder, and windowpane flounder. Yet, this FMP continued a management system and measures that were similar to those adopted in the Interim FMP. The important measures were minimum fish size, minimum mesh size, and spawning area regulations, as well as a framework for regulating small-mesh fisheries. Direct controls on catch or fishing effort were not included. Although this FMP was amended several times, the amendments generally fine-tuned the existing system under the interim FMP and added more groundfish species into the management unit. The fishery remained open to access with a nominal and unrestrictive requirement for vessel permits.

One important feature of this FMP was that it instituted a Groundfish Technical Monitoring Group (TMG) consisting of NMFS and state biologists to monitor the

¹ The material in this section is primarily drawn from Wang (1993).

performance of the FMP. In 1988, the TMG issued a report indicating that the FMP failed to protect major groundfish resources, *i.e.*, cod, haddock, and yellowtail flounders from overfishing.

602 Overfishing Guidelines

In July 1989, the NMFS issued a set of management guidelines for overfished resources, called the 602 overfishing guidelines. These guidelines required an overfishing definition to be specified for every fish stock in FMPs, and directed the Councils to design and propose a stock rebuilding program for any stock that is overfished by the definition (NMFS 1989; Rosenberg *et al.* 1994). The Council, against a backdrop of the 602 guidelines and the TMG report, developed Amendment 4 to the groundfish FMP. Adopted in 1991, Amendment 4 included the overfishing definition for most of the regulated groundfish species. By those definitions, all stocks of cod, haddock, and yellowtail flounder were overfished. However, it did not include a stock rebuilding program for overfished stocks.

Consent Decree

Following the NMFS approval of Amendment 4, NMFS was sued by the Conservation Law Foundation (CLF) for implementing Amendment 4 that did not prevent overfishing of cod, haddock and yellowtail flounder stocks, as required in the 602 guidelines. A court settlement in the form of a "consent decree" was reached between NMFS and CLF to reduce the groundfish fishing mortality by 50% in a 5-year rebuilding schedule. In response to the consent decree, the Council prepared and submitted Amendment 5 to the groundfish FMP.

Amendment 5 to the Groundfish FMP (1994–95)

The main purpose of Amendment 5 was to eliminate the overfished condition of the principal groundfish stocks (cod, haddock, and yellowtail flounder) by reducing the fishing mortality by 50% over the next 5–7 years (NEFMC 1993). In pursuing its objectives, the Council amendment expanded the management unit to include all stocks of cod, haddock, pollock, yellowtail flounder, winter flounder, witch flounder, windowpane flounder, American plaice, redfish, white hake, red hake, silver hake, and ocean pout. Further, the amendment included the following components as the core management system for the resource: (i) A moratorium on the issuance of additional vessel permits during the rebuilding period of 5–7 years, with exceptions for smaller and lower power vessels; (ii) an effort control system allocating and limiting individual vessel days-at-sea (DAS); (iii) an effort reduction program to reduce the initial vessel days-at-sea allocation by 10% each year and down to 50% of the initial allocation in five years; (iv) a continued mesh-size regulation scheme for vessels retaining more than the groundfish "possession limit" that was set at 500 pounds; (v) an interim sink gillnet regulation to reduce harbor porpoise bycatch using four-day blocks of time during which all gear must be out of the water; (vi) the mandatory reporting of landings and fishing data by groundfish dealers and vessels respectively.

Amendment 7 to the Groundfish FMP (1996 to Present)

While Amendment 5 was under development, the stocks of cod, haddock, and yellowtail flounder continued to decline in abundance. In mid 1994 as Amendment 5 was being implemented, the latest stock assessments documented that haddock stocks were at a record low level, two yellowtail flounder stocks (Southern New England and Georges Bank stocks) had collapsed and the collapse of the Georges Bank cod stock was imminent. In August 1994, based on stock assessment reports, the NMFS Northeast Fisheries Science Center issued a Special Advisory Report. This special report stated that the fishing mortality for the final year of the 5-year rebuilding schedule under Amendment 5 would not prevent the stocks from further decline. It also advised that fishing mortality rates should be reduced to as low a level as possible, approaching zero, to avert a collapse of cod and improve the prospects of rebuilding the yellowtail flounder stocks. Further, the status of other groundfish stocks were also considered depressed with many of the stocks being overexploited (NEFMC 1996). This resulted in the Council initiating Amendment 7 with an objective "to reduce fishing mortality on Georges Bank cod, haddock, and yellowtail flounder and southern New England yellowtail flounder to as close to zero as practicable, and also to reduce fishing mortality for Gulf of Maine cod to rebuild the spawning stock biomass of the identified stocks" (NEFMC 1996).

Amendment 7 was approved and implemented in May 1996. It extended the existing measures of Amendment 5. The limited access permit was expanded to cover more small groundfish otter trawl and gillnet vessels from 45 down to 30 feet. The days-at-sea reduction schedule was accelerated, shortened by 2 years from a 5-year schedule under Amendment 5 to a 3-year schedule under Amendment 7.

Some new precautionary measures were added to the above fine-tuned measures. Total allowable catch (TAC) targets for the commercial sector were set for specific cod, haddock, and yellowtail flounder stocks (five stocks in total), and an aggregate TAC for the combined stocks of the other regulated species (seven other groundfish species). If an individual stock or aggregate TAC is reached in any period (e.g., year), the Council must take actions to restrict catch in the next period. A second measure established a Multispecies Monitoring Committee (*i.e.*, a groundfish monitoring committee) consisting of industry representatives and assessment scientists from NMFS, states and the Council. This committee is charged to track days-at-sea and TAC utilization, assess the groundfish stocks, and make proposals on necessary adjustments to the management measures relative to the FMP objectives. Thirdly, a certification of a bycatch fisheries program was put in place to minimize bycatch and the mortality of regulated groundfish. This provision assures that vessels without groundfish days-at-sea quotas are not allowed to fish in northeast groundfish fishing areas unless the NMFS Regional Administrator certifies that the vessels involved can achieve a groundfish bycatch less than 5% of their trip catch.

Economic Assistance Program

The U.S. Department of Commerce, the supervisory agency of National Marine Fisheries Service (NMFS) and the National Oceanic and Atmospheric Agency (NOAA), initiated two economic assistance programs parallel to, but independent of, Amendments 5 and 7. In 1994, the first program was initiated to mitigate the impact of Amendment 5 on fishing industries and communities. This economic assistance program, consisting of a \$30 million grant, was designed to assist fishing industries and communities by including grants for developing alternative fisheries

(i.e., underutilized species and aquaculture), improving fishery infrastructure, training fishermen for alternative jobs, and promoting community development.

The second program under implementation is a voluntary vessel buyback program for reducing the fishing capacity of the groundfish fleet. The buyback program, with a budget of \$25 million, has two parts: a pilot project of \$2 million, and a follow-up project of \$23 million. The pilot project, which has been completed, was to establish program procedures and identify evaluation criteria. Detailed procedures are now available and used in the second project. The procedures include the owner's proposal for selling his groundfish vessel to the U.S. federal government with a proposed vessel price. One criterion to establish the vessel purchase priority is the ranking of the vessels by the ratio of the vessel's groundfish revenue to purchasing price; the higher the ratio, the higher the priority for the vessel to be bought by the federal government. With a \$2 million budget, the pilot project bought and retired eleven groundfish vessels with a total of 911 GRT, 4355 horsepower and 2106 vessel days-at-sea. With a linear extrapolation, the \$25 million budget is estimated to retire 11,388 GRT, 54,438 horsepower and 26,325 days-at-sea. The estimated days-at-sea quota to be retired is approximately 20% of total days-at-sea quota under Amendment 5.²

Summary

New England groundfish management has changed over time and evolved to a program that addresses some of the fundamental problems of resource management. This groundfish management is an example of a U.S. fishery management program that has dealt with overutilized groundfish resources since the Magnuson Act was implemented with limited success. The Act and the 602 overfishing guidelines, along with the involvement of the public, have altered the strategy for managing New England groundfish fisheries. The new fishery management program is different from the traditional program in that it includes an overfishing definition for each groundfish stock, a stock rebuilding time schedule with an overfishing threshold level, a limited access program, a vessel days-at-sea quota system with a days-at-sea reduction schedule, and necessary enforcement, monitoring, and evaluation systems. Also included in the strategy are two economic assistance programs to mitigate the impact of the management program on the industries and to reduce the fishery harvesting capacity of the fisheries. These include a \$30-million grant to mitigate the economic impact and a \$25-million vessel buyback project to reduce the harvesting capacity.

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² The estimated 26,325 DAS quota to be retired under the \$25 million vessel buyback program accounts for about 30% of the DAS quota of the active groundfish vessels which used a DAS phone-in system in 1995.

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