

Sustaining and Rebuilding

NOAA FISHERIES 2002 REPORT TO CONGRESS

The Status of the U.S. Fisheries



U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Office of Sustainable Fisheries

April 2003

SUSTAINING AND REBUILDING

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2002 REPORT TO CONGRESS
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As mandated by the Sustainable Fisheries Act amendments to
the Magnuson-Sevens Fishery Conservation and Management Act of 1996



NOAA Fisheries

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A MESSAGE FROM THE ASSISTANT ADMINISTRATOR FOR FISHERIES, NOAA

Welcome to the NOAA Fisheries' report on the status of the U.S. fisheries for 2002!

Successes and Challenges

This report documents another year of successes and challenges for NOAA and the eight regional Fishery Management Councils. Together, we have been working to implement the goal of sustainable fisheries as envisioned by Congress with the passage of the Sustainable Fisheries Act (SFA) in 1996. Since the passage of the SFA, NOAA has made significant progress in our scientific knowledge of marine fisheries and in our ability to manage these resources. The SFA reinvigorated efforts to prevent the overfishing of our stocks and to rebuild those that are depleted.

Most of our overfished stocks have rebuilding plans in place. NOAA Fisheries is working with the Councils to continue to rebuild these stocks to levels consistent with producing the long-term maximum sustainable yield. This year's report documents the consistent progress of our efforts to achieve the SFA goals as some stocks show remarkable progress. For example, Gulf of Maine/northern Georges Bank silver hake in the Northeast region has been successfully rebuilt. Resilient stocks continue to benefit from management absent of a formal rebuilding plan. For example, the northern stock of red hake, although never formally required to have a rebuilding plan, has rebuilt to 165 percent of its target biomass level.

Looking Back, Moving Forward

Removing a stock from the list of overfished species is always an important milestone. Yet since stocks are added and dropped from the list of overfished stocks for a variety

of reasons, simply removing them from the list is only part of the story. A stock should be removed because real biological improvements in the stock have been made to consider that stock fully rebuilt and healthy. This year, we've paused to look back at the changes in each stock's status over the past five years, and to look at the reasons for the changes. Our management efforts have been successful and the general biological trends for our nation's stocks have been positive. Our nation's fisheries are moving in the right direction.

Yet challenges still lie before us. Many valuable stocks remain overfished. Some rebuilding plans have rebuilt stocks to the point where they are no longer considered overfished, yet are not at their final goals. Still other overfished stocks do not have SFA rebuilding plans in place for a variety of reasons, such as those managed under the Endangered Species Act or by our state partners. NOAA Fisheries is currently working with several Councils to refine a number of previously approved rebuilding programs to achieve better the intent of the SFA.

With continued dedication and diligence, the goals of the SFA are within reach. NOAA Fisheries continues to be committed to being transparent, timely, and effective in its responsibilities as stewards of our marine fishery resources.

William T. Hogarth

William T. Hogarth, Ph.D.

EXECUTIVE SUMMARY

This report serves to describe the state of our nation's fisheries and the effectiveness of fisheries management under the Magnuson-Stevens Fishery Management and Conservation Act (MSA) as amended in 1996 by the Sustainable Fisheries Act (SFA). Under the SFA, Congress provided fisheries managers with rigorous management standards to address better human impacts on the environment. The SFA placed critical emphasis on the need to end overfishing, rebuild overfished stocks, and establish management plans designed to ensure biologically and economically sustainable fisheries. A stock that is above an established fishing mortality (harvest) rate is said to be subject to overfishing. A stock that is below its prescribed biological threshold is considered overfished.

Since the passage of the SFA, significant progress continues to be made in our scientific knowledge of marine fisheries and in our ability to manage for the sustained use of these resources based on that knowledge. This report responds to the Congressional requirement for an annual report on the progress of addressing overfishing and rebuilding overfished fisheries in the United States to gauge the effectiveness of the SFA.

This report on the Status of the U.S. Fisheries, 2002, is the sixth annual report of its kind. It identifies 932 marine fish stocks in the U.S. Exclusive Economic Zone (EEZ), an area that extends from three to 200 miles offshore and covers more than 2 million square miles, including those stocks that straddle international boundaries and highly migratory stocks. The report contains many changes since 2001, reflecting the dynamic nature of fisheries science and management, and documenting the progress being made over time through improved methodologies. In response to

"The Secretary shall report annually to the Congress and the councils on the status of fisheries within each council's geographic area of authority and identify those fisheries that are overfished or are approaching a condition of being overfished."

-Section 304(e)(1) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act (SFA) of 1996

the Congressional requirement, the report examines stocks according to their individual status and answers several questions to help gauge the effectiveness of the SFA provisions:

1. Is a stock determined to be subject to *overfishing*?
2. Is a stock determined to be *overfished*?
3. How do this year's determinations compare to previous years?
4. How many rebuilding programs have been approved, and what is the status of those not yet approved?

Summary

Although some stocks remain overfished, the general biological trend in biomass for the status of the nation's stocks continues to be positive. In 2002, the nation's fish stocks continued the progress begun in 1999 after SFA's strengthened management tools were more fully implemented. This year, another major¹ stock was declared fully restored under its rebuilding plan - Gulf of Maine/northern Georges Bank silver hake in the Northeast (**discussed on page 10**). In addition, the ability of a fishery management plan (FMP) to benefit other stocks not included under its management regime is exemplified by the northern Georges Bank/Gulf of Maine red hake stock which attained levels exceeding the average biomass associated with maximum sustainable yield, due, in part, to management measures implemented for other fisheries (**discussed on page 9**).

Over the period 1997-2002, overfishing has been corrected a total of 26 times, and stocks have been rebuilt above their biomass thresholds a total of 20 times. Although the reverse has also occurred (in 14 cases, overfishing has been initiated and in 13, a stock has become overfished), the net result has been positive and includes several important stocks (**discussed on page 21**).

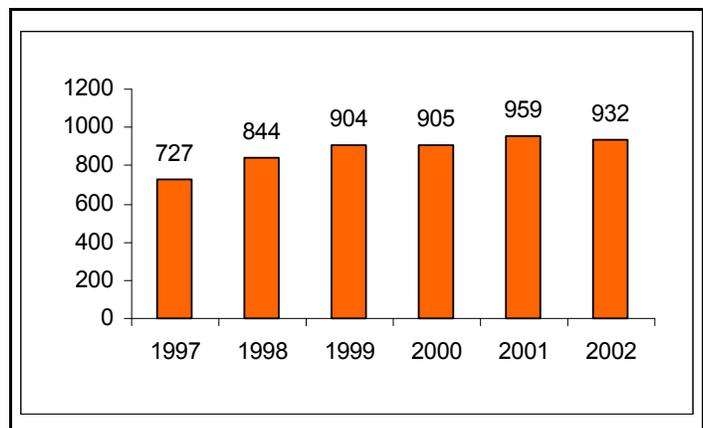


Figure 1. Number of stocks highlighted in each report.

Identified Stocks

The number of stocks covered by the annual report is one of the changing variables demonstrative of the dynamic and evolving nature of fisheries science and management. Since 1997, the total number of stocks on which we have reported has gradually risen to a high of 959 in 2001, and then decreased to 932 in 2002 [**Figure 1**]. Stocks are added

¹A "major" stock is a stock that has 200,000 pounds or more of landings in 2001 (with some exceptions, see page 5).

and deleted from the report for a variety of reasons. In 2002, several stocks that were listed with the Bering Sea and Aleutian Islands fisheries yet are generally not found in that area were removed from this year's report. For other stocks, amendments to FMPs, new FMPs, or shifts in management responsibilities (e.g., to the states) resulted in additions and deletions. As new information about our nation's marine ecosystems increases and methodologies related to how stocks are identified and managed under FMPs continue to change over time, the number of stocks included in future reports will reflect those changes.

Overfishing and Overfished

The results this year emphasize the need to examine the data carefully. The proportion of stocks not subject to *overfishing* is down, relative to the 2001 report, as is the proportion of stocks that are not *overfished* [Figures 2 and 3]. However, many stocks are showing continued growth toward rebuilding [Figure 4].

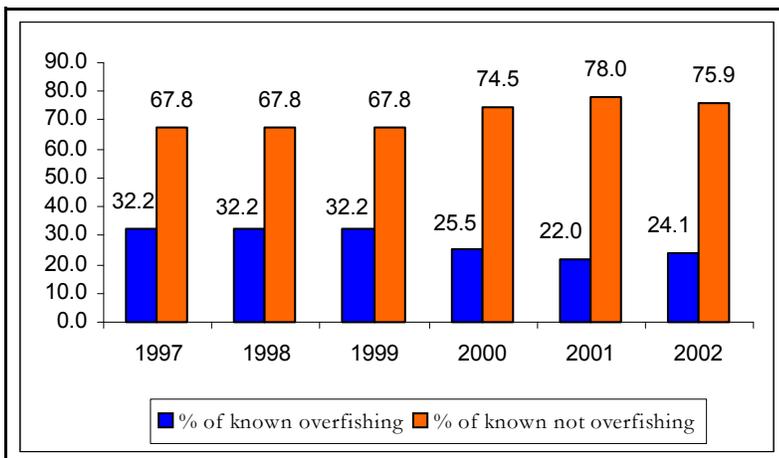


Figure 2. Overfishing status for stocks of known status, 1997-2002.

While it may seem counterintuitive that stocks show continued growth in light of these changes in proportions, it is important to keep the numbers in context and to look at the *reasons* behind the changes. Because many types of changes occur from one report to the next, comparing one year's results with previous year is difficult. Thus, this year's report includes, for the first time, a retrospective analysis of yearly stock-by-stock changes in status from 1997 to the present (discussed on page 21).

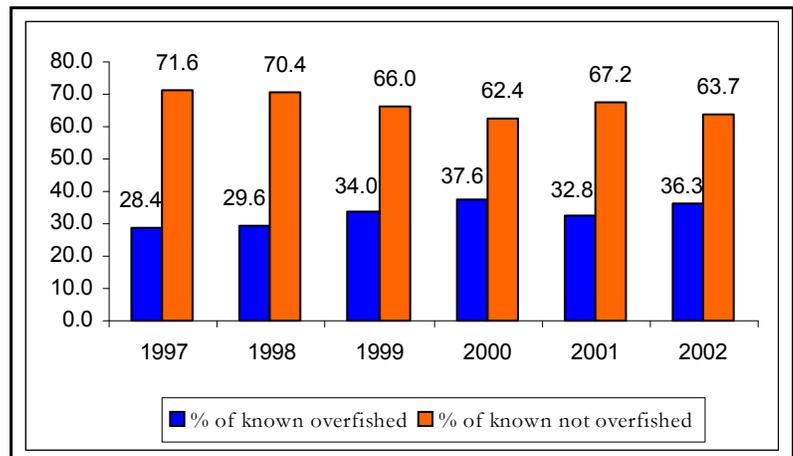


Figure 3. Overfished status for stocks of known status, 1997-2002.

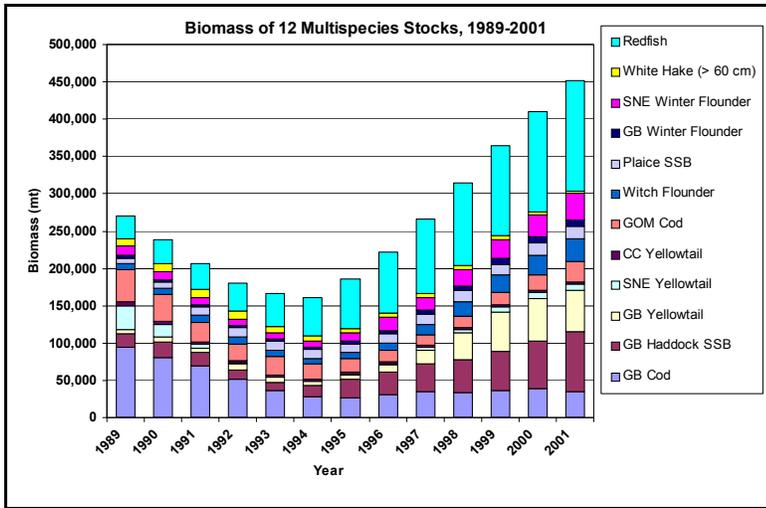


Figure 4. Changes in Northeast groundfish biomass levels (courtesy of NEFMC).

Rebuilding

As noted above, rebuilding programs continue to result in significant gains in stock biomass levels (**discussed on page 12**).

NOAA Fisheries has rebuilding programs approved or in development for most of the 86 overfished stocks. In 2002, the total number of approved programs stood at 75 [Figure 5], including 33 rebuilding programs currently in place for overfished major stocks and 37 for overfished minor stocks. An additional 4 programs are approved for major stocks that are not overfished but must

continue to rebuild to the average level associated with maximum sustainable yield, and 1 major stock has an undefined rebuilding target. In some cases, particularly Atlantic highly migratory species, rebuilding programs have been approved, but not yet implemented pending adoption of an international rebuilding regime.

Several stocks are reported as overfished for the first time in this report, including Pacific whiting and yelloweye rockfish in the Northwest region and southern New England/mid-Atlantic windowpane flounder in the Northeast region. These stocks will require rebuilding plans². NOAA Fisheries also is currently working with several Councils to refine a number of previously approved rebuilding programs to achieve better the intent of the SFA.

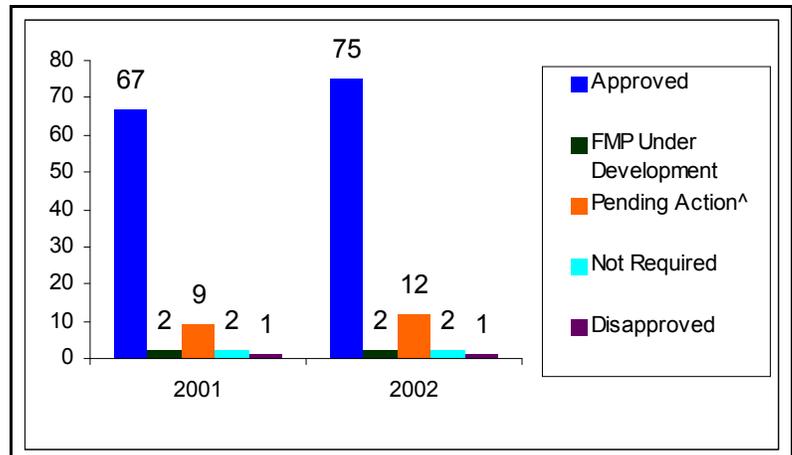


Figure 5. Status of rebuilding plans for overfished stocks, 2001-2002.
[^] Under development or not yet submitted.

² Although Atlantic pollock is also newly listed, it was found to be not overfished after the August 1, 2002, cutoff date for this report.

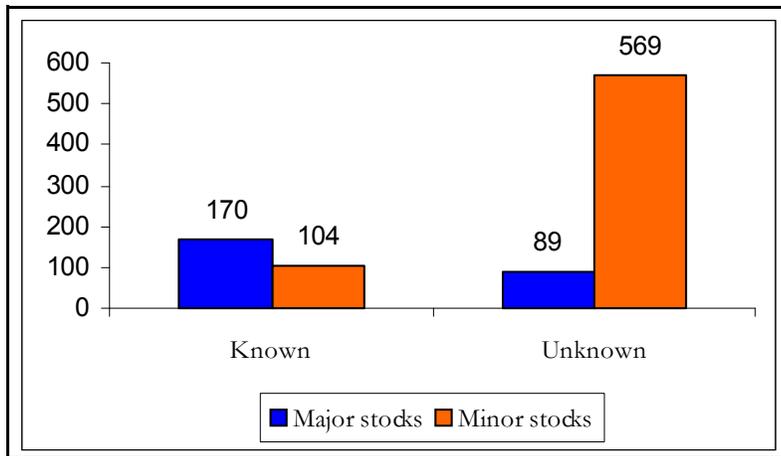


Figure 6. Number of stocks of known and unknown overfishing determination, 2002.

What is Really Known and Unknown

This year, as with last year’s report, stocks are classified as major (those with harvested landings of 200,000 pounds and over) or minor (landings less than 200,000 pounds) (discussed on page 5). This distinction is an effort to interpret more accurately the data and characterize stock status, particularly with regards to whether that status is known or unknown, as well as to place the results in the context of current management priorities.

When viewed with this level of detail for 2002, of the 658 stocks whose overfishing status is currently *unknown*, only 89 stocks or 14 percent are characterized as major; of the 274 stocks whose overfishing status is *known*, 170 stocks, or 62 percent, are major stocks [Figure 6]. Of the 695 stocks whose overfished status is currently *unknown*, only 99 stocks or 14 percent are characterized as major; of the 237 stocks whose overfished status is *known*, 160 stocks, or 68 percent, are major stocks [Figure 7]. Major stocks accounted for approximately 99 percent of the landings in 2001.

While minor stocks are important in an ecosystem context, these stocks have not merited the same level of priority given to stocks that are actively harvested. As a consequence, these stocks have often not been surveyed to determine their status commensurate with the requirements of this report, thus their status is *unknown* in most cases. Presenting the information about these non-target stocks in the same manner as stocks under directed fisheries has proven confusing to the merits and intent of this report. This report serves to assess the effectiveness of the SFA to eliminate and prevent overfishing and rebuild healthy fish stocks.

NOAA Fisheries does not routinely assess the status of many of the 932 fish stocks because generally they are not targeted in fisheries and have a low probability of becoming overfished

NOAA Fisheries has undertaken an aggressive plan of action to improve its ability to assess more of the 932 fish stocks that are identified and referenced in federal fishery management plans. To begin implementation of this plan, titled [Marine Fisheries Stock Assessment Improvement Plan](#), NOAA Technical Memorandum, NMFS-F/SPO-56 (October

2001), the agency received an increase of \$15 million in fiscal year (FY) 2003 and has requested additional funding for FY 2004.

NOAA Fisheries does not routinely assesses the status of many of the 932 fish stocks because generally they are not targeted in fisheries and have low probability of becoming overfished. Based on a ranking system, the *Marine Fisheries Stock Assessment Improvement Plan* shows that stocks with the longest history of catches or value rank high for having the best data collection programs and the most comprehensive assessments. This ranking system shows that NOAA Fisheries is prioritizing its allocated research dollars to conduct status determinations for those species most vulnerable to overfishing. The plan also indicates that modernization of stock assessments will require significant additional staff, some of which could be filled through cooperative research programs and other partnerships.

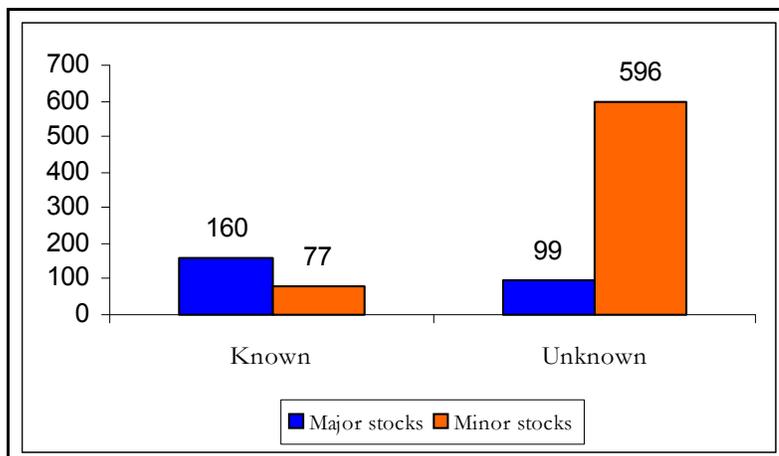


Figure 7. Number of stocks of known and unknown overfished determinations, 2002.

and the most comprehensive assessments. This ranking system shows that NOAA Fisheries is prioritizing its allocated research dollars to conduct status determinations for those species most vulnerable to overfishing. The plan also indicates that modernization of stock assessments will require significant additional staff, some of which could be filled through cooperative research programs and other partnerships.

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Sustaining and Rebuilding

NOAA FISHERIES 2002 REPORT TO CONGRESS

The Status of the U.S. Fisheries

This report outlines the state of the nation's fisheries and provides an update on the progress of rebuilding plans as of August 1, 2002. It provides Congress and the public with a comprehensive summary of how, with the eight Regional Fishery Management Councils (Councils), NOAA Fisheries is working to ensure that the nation's fisheries are robust and productive for the long-term. This is the sixth annual report on the status of U.S. fisheries since 1997.

Historical Review

The first Status of the U.S. Fisheries report was released in 1997, just one year after passage of the SFA required key revisions in the way *overfishing* and *overfished* should be defined and calculated in all of the nation's FMPs. In the early reports, NOAA Fisheries used existing overfishing definitions in the FMPs that were based either on the rate of fishing mortality (overfishing) or the size of the stock (overfished), but seldom both. In fact, most pre-SFA definitions were based on fishing mortality alone.

By the 2000 report, many of the overfishing definitions in FMPs had been amended to conform to the SFA. The revised FMPs included status determination criteria based on both threshold fishing mortality rate and biomass components. Both the 2000 and 2001 reports reflected determinations for overfished and overfishing; i.e., the determination that a stock was *overfished* was based on whether the size of the biomass was above its threshold, and the determination of whether *overfishing* was occurring was based on whether the fishing mortality rate was below its threshold. This basis of determination continues in this report.

Definitions

Overfished	A stock size that is below a prescribed biomass threshold
Overfishing	Harvesting at a rate above a prescribed fishing mortality threshold
Known	A recent assessment provided enough information with which to make a determination
Unknown	No recent assessment was conducted or insufficient information about this stock exists to make a determination
Major	Total landings in 2001 (commercial and recreational) equals or exceeds 200,000 pounds
Minor	Total landings in 2001 are less than 200,000 pounds

For definitions of biological terms, see Appendix 6.

Using the Best Available Data

NOAA Fisheries reviewed each stock in this report relative to status determination criteria using the best available, most current, scientific information. Based on this information, for each stock, it was determined:

- Whether the stock is subject to overfishing;
- Whether the stock is overfished; or
- Whether it is approaching an overfished condition.

NOAA Fisheries used many resources to make these determinations, including final, reviewed documents such as Stock Assessment Review Committee reports and recommendations of each Council's Science and Statistics Committee. Since some stocks are assessed infrequently (as many as five years between assessments), the year of the most recent assessment for the stock is provided. Also included is the last year of data used in that assessment (i.e., the assessment using data through a particular year). Since some species are not included in a federal FMP (i.e., species managed by an interstate marine fisheries commission, individual states, or international agreement), the stock status determination was made using other official sources of information, as adopted in accordance with the relevant FMP.

Listing of Stocks

With a few exceptions, a substantial portion of a domestic stock must occur within the EEZ for it to be identified in this report. Listing in this report is based on the presence/absence of the stock in the EEZ, rather than the area from which the most landings occur. Some notable exceptions to the "substantial portion" requirement include highly migratory species and transboundary stocks, as well as species in the U.S. Caribbean where many managed species are harvested inshore of the EEZ. In addition, many species are included for which there is little directed fishing, and thus, little known on the dynamics of the populations.

Most stocks in this report are managed under a Council or joint Council FMP. There are 42 federal FMPs in effect, six under development, one that has been approved but not yet implemented, and several other fisheries in the EEZ that are managed by a non-federal FMP. Stocks managed under a non-federal FMP are generally managed by the states through the interstate marine fisheries commissions. The states also aid in achieving the goals of some federal FMPs. For example, the Atlantic States Marine Fisheries Commission implements compatible management measures in state waters under the joint Mid-Atlantic Council/Commission *Summer Flounder, Scup, and Black Sea Bass FMP*, thereby applying comprehensive management throughout the range of these species.

Some FMPs contain only one or a few stocks in the management unit, while others contain more than 100 stocks. To the extent possible, reports on individual stocks for each fishery or FMP are provided separately.

Newest Fishery Management Plan

On June 15, 2002, NOAA Fisheries approved the newest FMP, the Western Pacific Council's *Coral Reef Ecosystems FMP*. However, this FMP has not yet been implemented and is not included in this report. The stocks identified in the management unit represent over 140 individual species taken in both directed and incidental fisheries, including the aquarium trade. All of the stocks in this FMP would be categorized as minor under the current definition in this report, with the exception of mackerel scad and bigeye scad. These 2 stocks appeared in last year's report as species in an FMP under development and are major, based on 2001 landings. However, because they are part of the new *Coral Reef Ecosystems FMP*, they have been removed from this year's report. These two species will be listed individually to the extent required next year as part of the inclusive listing of all of the stocks in that FMP. The status of mackerel scad and bigeye scad had previously been listed as *unknown*.

Additional Changes to Stock Listings

- A new *Deepsea Red Crab FMP* was added for the Northeast, listed previously as under development.
- Pink Salmon, chum salmon, sockeye salmon, and steelhead (all previously listed in the *West Coast Salmon FMP*) were added to the table *Stocks not contained in federal FMPs* to better reflect that federal management impacts are very limited and that these stocks are not contained in the FMP. Accordingly, their status was changed from *N/A* to *undefined*, since the *N/A* applies only to stocks in the FMP.
- Sea-run cutthroat was also added to the table for *Stocks not contained in federal FMPs*. This stock is rarely caught in the Pacific Council's ocean fisheries and no direct management measures exist for it.
- White seabass, white croaker, California barracuda, and giant squid were removed from the report because it was determined that a substantial portion of these stocks do not occur in the EEZ.
- Two additional species of slipper lobster were added to the *Western Pacific Crustacean FMP*. These species, contained in the FMP, were inadvertently omitted from earlier reports.
- Escolar was deleted from the tables, as the species is actually in the oilfish family and oilfish is already included.
- The *Western Pacific Corals FMP*, as termed in earlier reports, is now referred to by its full name, the *Western Pacific Precious Corals FMP*, to distinguish it from the recently approved *Western Pacific Coral Reef Ecosystems FMP*.
- Local names more familiar to the Pacific Island constituents were added to the common names for the *Bottomfish and Seamount Groundfish of the Western Pacific FMP*.

- Seabass (hapuu'upu) contained in the *Bottomfish and Seamount Groundfish of the Western Pacific FMP* is now assessed as a single stock, instead of two.
- Opah was changed to moonfish to reflect the name used in the *Western Pacific Pelagics FMP*.
- In the *Bering Sea/Aleutian Islands Groundfish FMP*, Pacific ocean perch—previously listed in the report as two stocks—is now assessed as a single stock.
- Twenty-one rockfish stocks³ were removed from *Bering Sea/Aleutian Islands Groundfish FMP* because those species are generally found only incidentally in the management area. The list of species included in the “other rockfish” complex last year was compiled from survey and observer databases. However, these apparent sightings took place well outside the common range of the species and were probably misidentifications or stragglers not indicative of a local population. Thus, those stocks are removed from the list this year.
- Black rockfish and blue rockfish were removed from the *Gulf of Alaska Groundfish FMP* listing, since they are no longer in the management unit.

Changes from Last Year

This year’s report is based on assessment results that were completed as of August 1, 2002. Results from fishery stock assessments that were in progress on the cutoff date will be captured in next year’s report. However, some notable rebuilding progress was discovered in 2002 after August 1; for example, North Atlantic swordfish is no longer overfished and close to being fully rebuilt. Another example is Atlantic pollock. The latest assessment for Atlantic pollock indicates that biomass in 2001 exceeds the overfished threshold specified for the stock. Since these stocks assessments were finalized after the August 1, 2002 date, their determinations will not be revised until next year’s report.

Last year’s report erroneously indicated that northern rockfish, sharpchin rockfish, shorttraker rockfish, and rougheye rockfish, were removed from the *Bering Sea/Aleutian Islands Groundfish FMP*, when in fact, the Bering Sea and Aleutian Islands stocks were combined for each of these four species. Previous reports had listed each of these species as two separate stocks.

The term *principal*, used in previous reports to define regional fish stocks with directed fisheries, has been dropped. Fish stocks are defined as either major or minor, depending on the level of landings in 2001. In previous reports, *principal* was used together with the major/minor stock distinction, which created confusion. The distinction of

³ Aurora rockfish, blackgill rockfish, blue rockfish, bocaccio, brown rockfish, canary rockfish, chameleon rockfish, chilipepper, copper rockfish, greenstriped rockfish, pink rose rockfish, pygmy rockfish, rosethorn rockfish, rosy rockfish, splitnose rockfish, striptail rockfish, tiger rockfish, vermilion rockfish, widow rockfish, yellowmouth rockfish, and yellowtail rockfish.

major/minor based on landings will help better portray the progress in rebuilding and sustaining the most critical fish stocks. As a result of this major/minor distinction, all of the stocks in a FMP may not appear in a single table, since some stocks in the FMP are major and some are minor.

Major and Minor Stocks

As in previous reports, this report continues to distinguish between major and minor stocks for 2002. Landings determine the relative size of the stock and/or its value assigned by the marketplace (limited landings may indicate lack of a market for the species). Based on landings for all stocks, 200,000 pounds was chosen as a reasonable, although somewhat arbitrary, dividing line to distinguish between major and minor stocks. Since landings data have been updated for this year's report, changes in stock designations between major and minor from last year may reflect actual changes in the importance of a fishery or may reflect variations in – or corrections to – the available data.

Major/Minor Exception: West Coast Salmon

As with last year, the 200,000 pounds of landings criterion is not applied to Pacific coast salmon. The Pacific Council's *West Coast Salmon FMP* uses exploitation rates to classify those natural stock components that are subject to harvest impacts in ocean fisheries under Council jurisdiction. Major west coast salmon stocks are identified as those with a cumulative adult equivalent exploitation rate more than 5 percent in ocean fisheries under the Council's jurisdiction during base periods utilized by the fishery regulation assessment models (1979-1982 for chinook and 1979-1981 for coho). Minor stocks do not meet that classification.



Hauling a catch of salmon aboard a purse seiner in Prince William Sound, AK.

Report Arrangement and Format Changes

This report is centered on ten tables. The first two tables provide summary information, the second two tables provide the results of the interannual stock-by-stock analysis, and the last four identify the status of the stocks: major, minor, those not in federal FMPs and those in federal FMPs under development. The tables are followed by ten appendices that provide greater detail on methodology and overfishing definitions, as well as a guide to acronyms used throughout this report and in the tables. This year, the table layout has been restructured by:

- Eliminating the *principal stock* distinction.
- Listing stocks within FMPs separately, depending on whether they are major or minor.
- Eliminating the table for stocks contained in an FMP but not in the management unit.

Other Revisions and Improvements to the Report

- A determination of each stock's status was made using information as of August 1, 2002.
- Since some stocks are assessed infrequently, the year of the last assessment for the stock is provided.
- Included with the year of the last assessment is mention of the last year of data used in that assessment.
- Last year's 1999 commercial and recreational landings data were updated using 2001 data to determine major and minor stocks.
- Stocks are listed separately into one of two tables, depending on whether they are major or minor stocks.

Becoming Acquainted with the Tables

- As with previous years, 200,000 pounds of landings was used to distinguish between major and minor stocks to provide an adequate representation of species critical to each region.
- The report divides the overfishing and overfished columns into pre- and post-SFA overfishing definitions to make the basis for the determinations as clear as possible.
- For either *overfishing* or *overfished*, a listing of *yes* means that the most recent assessment has determined that the stock exceeds the fishing mortality threshold for overfishing or is below the biomass threshold for overfished, or that no assessment has been completed in the past year to change the *yes* determination from last year's report.
- For either *overfishing* or *overfished*, a listing of *no* means that the most recent assessment has determined that the stock does not exceed the fishing mortality threshold for overfishing or is above the biomass threshold for overfished, or that no assessment has been completed in the past year to change the *no* determination from last year's report.
- For either *overfishing* or *overfished*, a listing of *unknown* means that a recent assessment has not been completed or that insufficient information was available to make a determination about the status of the stock.
- For either *overfishing* or *overfished*, a listing of *undefined* means that no status determination criteria are specified in the FMP with which to make a determination.
- For either *overfishing* or *overfished*, a listing of *N/A* means that the determination is not applicable, usually because the stock is exempt from requiring a definition of overfishing or overfished. This designation applies only to Pacific salmon stocks for the exemption reasons noted in the tables.
- For *overfished*, stocks that are listed as *no-rebuilding* were previously below the minimum stock size threshold (overfished) and are now above that level (not overfished), yet have not been rebuilt to the target levels specified in their rebuilding plans.

- For the *approaching overfished condition*, a listing of *yes* means that (1) trends in fishing effort, fishery resource size, and other appropriate factors, indicate that the fishery will become overfished within two years, and (2) a level of analysis sufficient to determine such a listing was conducted during a recent assessment.
- For the *approaching overfished condition*, a listing of *unknown* means that an analysis sufficient to determine if the fishery will become overfished within two years was not conducted or such a determination could not be made.
- For the *approaching overfished condition*, a listing of *N/A* means that the determination is not applicable, generally because the stock is already overfished.
- The *management action required* for *overfished* stocks that do not have a rebuilding program is identified as needing a *rebuilding program*.
- The *management action required* for *overfished* stocks that are currently rebuilding under an approved rebuilding program⁴ is identified in the table as *continue rebuilding*.

Assessment Lags and Carry-Over Determinations

In previous reports, a stock may have been listed as subject to overfishing, but specific management action may have since been taken by NOAA Fisheries and the respective Council to stop overfishing for that species. However, a new assessment may not have occurred to verify the success of the management action or to support a change in the status. This report continues to list such stocks as having overfishing occurring, rather than being *unknown*, until an assessment confirms that the efforts of NOAA Fisheries and the Councils have been successful in stopping overfishing. This same approach pertains to reporting on the management action required



NOAA Research Vessel, Albatross IV, based out of Woods Hole, MA, conducts resource surveys from ME to NC.

based on the stock's status. While action may have been taken to reduce fishing mortality rates, without an assessment NOAA Fisheries cannot presume that the action was successful, and so the required action of *reduce mortality* remains. However, this is not intended to pre-judge the action as unsuccessful or to imply that additional measures are needed.

Pre-SFA/Post-SFA Definitions for Overfishing and Overfished

NOAA Fisheries determines the status of fish stocks based on definitions of overfishing and overfished approved under the SFA, when appropriate. These determinations are called “post-SFA” determinations. However, for a

⁴ The Mid-Atlantic Council's scup stock is currently rebuilding under management measures despite having its formal rebuilding plan disapproved.

number of reasons, some FMPs have not yet been amended to conform to the SFA definitions and still use the older definitions of overfishing and overfished. Status determinations for stocks in these FMPs are called “pre-SFA” determinations. A status determination is based on one measure only – either pre- or post-SFA – not both. Until all FMPs use definitions that are in compliance with the SFA, NOAA Fisheries will continue to make the distinction between pre- and post-SFA. Not distinction between pre- and post-SFA is made for approaching an overfished condition. Since a stock is considered to be approaching an overfished condition if it is likely to become overfished in two years, it is generally based on stock level indicators and trends in fishing effort. The definition (either pre- or post-SFA) used to determine if a stock is approaching an overfished condition is based on the criteria associated with the biomass (overfished) component of the definition and trends in fishing effort.

Determining Improvements in Stock Status from Year to Year

It is difficult to gauge improvements in the status of stocks based on year to year comparisons. As stocks are added or deleted from the report and inaccuracies are corrected, the numbers of overfished stocks and those subject to overfishing will shift, though this is not an accurate indicator of how fisheries management is working to comply with the SFA and rebuild stocks. Further, as stock assessments report new or additional information, determinations may change, based more on a change in the amount and quality of data than on a change in the actual status. In addition, changes in definitions or interpretations of overfishing and overfished may result in status changes that mask actual fishing mortality and biomass trends. Thus, to better assess the changes and the reasons for the changes, a complete retrospective analysis of stock-by-stock changes in status from 1997 to the present can be found beginning on page 21.

Overview of Overfishing in 2002

- The number of stocks for which harvest rates exceeds the overfishing threshold increased from 65 in 2001 to 66 in 2002.
- The number of stocks found to have no overfishing decreased from 230 in 2001 to 208 in 2002.
- The number of stocks for which harvest rates are *unknown* or for which overfishing thresholds are not defined declined from 664 in 2001 to 658 in 2002.

Changes in Overfishing Status in 2002

- In the Northeast region, two stocks (Gulf of Maine haddock and thorny skate) were removed from the list of stocks subject to *overfishing*. Haddock is not subject to *overfishing*, whereas the status of skate is *unknown*.
- Three stocks (Georges Bank cod, witch flounder, and Cape Cod yellowtail flounder) were added as *overfishing* in 2002.

- The overfishing status determination criteria for nine species (offshore hake, Gulf of Maine/northern Georges Bank red hake, southern Georges Bank/mid-Atlantic red hake, and the winter, barndoor, smooth, little, clearnose and rosette skates) were listed as *undefined*. All except offshore hake were listed previously as *no*. Offshore hake had previously been listed as *unknown*.
- In the Southeast region, two species (south Atlantic red porgy and Gulf of Mexico gag) are no longer subject to *overfishing* as fishing mortality was reduced below thresholds.
- One species, little tunny, was listed as not subject to *overfishing* as a result of a recent assessment. This stock had previously been listed as *unknown*.
- Two species (south Atlantic golden crab and dolphin) were listed as *unknown*, having been previously listed as not subject to *overfishing*.
- In the Northwest region, Pacific whiting was added to the list of those subject to *overfishing*.
- Oregon coastal natural stock of coho salmon was revised from not subject to *overfishing* to *N/A*, to reflect the exemption specified in the FMP.
- Columbia River natural coho salmon was revised from *N/A* to *unknown*.
- In the western Pacific region, pink corals (three species), gold corals (four species), bamboo corals (two species), and black corals (three species), were changed from *no* to *unknown*.
- In the Alaska region, eastern Aleutian Islands tanner crab was previously listed as *unknown* under *overfishing*, but is now listed as *no* because fishing in the EEZ for this crab species is prohibited.
- Bering Sea Triangle tanner crab was changed from *no*, with footnote that there is no fishery in the EEZ, to *unknown* under *overfishing* because these crabs can be taken in conjunction with the Bering Sea grooved tanner crab fishery.
- For the Highly Migratory Species group, finetooth shark was added to the list of stocks subject to *overfishing*.

Overview of Overfished Stocks in 2002

- The number of stocks determined to be overfished increased from 81 in 2001 to 86 in 2002.
- Stocks found to be not overfished decreased from 163 in 2001 to 150 in 2002.
- The number of stocks for which the overfished status is *unknown* or for which fishing mortality thresholds are not defined declined from 722 in 2001 to 695 in 2002.

Several stocks are in the process of rebuilding, absent a formal rebuilding plan. For example, the scup stock continues to improve under management and favorable recruitment although its rebuilding plan was disapproved. The northern stock of red hake, although never formally listed as overfished and therefore not subject to a rebuilding plan under the SFA, has rebuilt from levels just over its threshold to 165 percent of its proxy biomass target.

Changes in Overfished Status in 2002

- As a result of a recent federal court order, NOAA Fisheries was required to develop and publicize the most current and reliable scientific information available for managing stocks in the *Northeast Multispecies FMP*. NOAA Fisheries determined, based on this new information⁵, that more conservative criteria than that set forth in Amendment 9 to the FMP were appropriate for assessing the status of several stocks. Since the criteria in Amendment 9 were determined to be no longer valid for these stocks, NOAA Fisheries applied the new criteria, which resulted in seven stocks in the Northeast (Gulf of Maine cod, Georges Bank cod, Gulf of Maine haddock, Georges Bank haddock, Cape Cod yellowtail flounder, Atlantic pollock, southern New England/mid-Atlantic windowpane flounder) being added to the list of *overfished* stocks this year.
- Of those above stocks, only Atlantic pollock and southern New England/mid-Atlantic windowpane flounder were not previously listed as *rebuilding*.
- Summer flounder, also listed previously as *rebuilding*, was returned to the list of overfished species.
- Spiny dogfish in the Northeast region was corrected to reflect an inaccurate listing of *overfished* in 2001. This stock is now listed as *undefined* because there is no overfished definition to make a biomass/stock level determination⁶.
- Three Northeast stocks are no longer listed as *overfished* (redfish, southern Georges Bank/mid-Atlantic silver hake and scup). These stocks have made strides in rebuilding and now exceed their overfished thresholds.
- The Gulf of Maine/northern Georges Bank stock of silver hake has been rebuilt under the FMP.
- One Southeast region species (south Atlantic gag) is no longer listed as *overfished*. This stock is now *rebuilding*.
- Ten species in the Southeast region (South Atlantic white shrimp, rock shrimp, brown shrimp, pink shrimp, white grunt, scamp, gray (mangrove) snapper, lane snapper, and gray triggerfish, and little tunny) are now listed as *not overfished*, having been previously listed as *unknown*.
- South Atlantic golden crab and dolphin were listed as *unknown* since no assessments were conducted on these stocks to justify the listing of *not overfished*.

⁵ The biomass and fishing mortality thresholds utilized for determinations in this report for these stocks were those criteria contained in the document "[Final Report of the Working Group on Re-Evaluation of Biological Reference Points for New England Groundfish](#)," Northeast Fisheries Science Center Reference Document 02-04 (March 2002), and not those approved in Amendment 9 to the FMP, many of which were 25 percent B_{MSY} . Thus, except where stated otherwise, biomass thresholds were 50 percent B_{MSY} (or proxy).

⁶ Spiny dogfish deserves special note, as its situation is somewhat unusual. NOAA Fisheries disapproved the rebuilding target proposed in the *Spiny Dogfish FMP* because the biomass target proposed by the Mid-Atlantic and New England Councils was inconsistent with the estimate of SSB_{MAX} (200,000 mt) that was recommended by the Spiny Dogfish Technical Committee, Overfishing Definition Review Panel and Councils' SSC. Last year, this stock was listed as overfished because, although the Councils did not adopt it, that specific estimate does exist. The FMP that contained the flawed biomass target also specified a rebuilding program to achieve that target in 5 years. NOAA Fisheries disapproved only the biomass target, and noted specifically in the letter to both Councils the partial approval of the FMP that, "the proposed target fishing mortality rate, fishing mortality threshold and biomass threshold are consistent with SFA provisions." Consequently, the target fishing mortality rates constitute a rebuilding program, despite the fact that there is no specific biomass target.

- In the Southwest region, two species of spiny lobster, three species of slipper lobster, several tuna relatives, three species of pink corals, four of gold, three of black and two bamboo corals, and black marlin were listed as *unknown*, having been previously listed as *not overfished*.
- In the Northwest region, two species are newly listed as overfished (yelloweye rockfish and Pacific whiting).
- In the Alaska region, Pribilof Island blue king crab is listed as *approaching an overfished* condition.
- For stocks in both the *Bering Sea/Aleutian Islands Groundfish FMP* and *Gulf of Alaska Groundfish FMP*, the overfishing/overfished definitions were revised to indicate that all stocks are covered, either directly or indirectly, by a definition containing a fishing mortality rate component; and for some stocks, the overfished definitions are contained in the SAFE Report, not their respective FMP.

Approaching an Overfished Condition

The basis for determining if a stock is approaching an overfished condition is an examination of the current stock biomass and trends in fishing effort. Unless the status of the stock is known, a determination about whether the stock will become overfished within two years cannot be made with any certainty. Therefore, the definition for the biomass threshold in the FMP, along with trends in fishing effort, should be the determining criterion in evaluating whether a stock is approaching an overfished condition. In some cases, the pre-SFA definition has remained in the FMP and was used as the basis for the determinations. Also, for Pacific salmon stocks, the determining criteria is based on maximum sustainable yield/maximum spawner potential objectives for natural stocks or stock complexes. More information regarding determinations for Pacific salmon can be found in **Appendix 1**. In this report, the number of stocks in the *approaching overfished condition* column should be added to the *not overfished* totals to arrive at a final count, because all determinations are based on the stock size or equivalent. Pribilof Island blue king crab is the only species *approaching an overfished condition* in 2002.

Major and Minor Stock Results

Except for Pacific salmon, a fish stock is classified as either major or minor based on its landings in 2001. The major stocks are more frequently targeted in fisheries and may be more susceptible to overfishing than minor stocks. As a result, major stocks are given priority for stock assessments, leaving the status of many of the minor stocks *unknown*. In 2002, 259 stocks are classified as major, accounting for 27.8 percent of the total of 932 stocks. Nearly 9 billion pounds of landings are attributed to those major stocks, accounting for 99.9 percent of the nation's total landings. Of the 932 stocks in the report,

**The 259 Major Fish
Stocks in the U.S.
Account for 99.9 Percent
of Total Landings,
Totaling 9 Billion Pounds
in 2001**

the status of 695 are either *unknown*, *undefined*, or *N/A* (a determination is not applicable). Of these, 86 percent are categorized as minor.

259 Major Stocks

- 41 are subject to overfishing
- 129 are not subject to overfishing
- 43 are overfished
- 117 are not overfished

673 Minor Stocks

- 25 are subject to overfishing
- 79 are not subject to overfishing
- 43 are overfished
- 33 are not overfished
- 1 is approaching an overfished condition

Rebuilding Programs

The SFA required NOAA Fisheries and the Councils to develop rebuilding programs for each overfished stock. By August 1, 2002, this mandate had been accomplished for all stocks with a few exceptions. Removing a stock from the list of overfished species is always an important milestone, one that demonstrates fishery management regimes have been successful in reversing downward trends of fish populations. However, removing a stock from the list is only part of the effort, as NOAA Fisheries must work with the Councils to continue to rebuild these stocks to the B_{MSY} level. A stock is required to have a rebuilding program until that stock has been rebuilt to B_{MSY} – only then can the stock be considered fully rebuilt and healthy. Therefore, there are many species that are no longer overfished, yet are still managed under rebuilding programs as they continue to rebuild completely.



A marlin on the swim platform of a charter vessel.

This report identifies 86 overfished stocks, 70 of which are managed under approved rebuilding plans. The remaining 16 stocks fall under several different scenarios. They may be managed by other federally actions that do not require rebuilding programs; they may have programs in various stages of development; or the stock has been newly declared overfished.

- Atlantic salmon is not managed under the MSA because it is listed under the Endangered Species Act (ESA).
- Atlantic sturgeon is managed by the ASMFC.
- Rebuilding programs for barndoor and thorny skates are under development.

- Eight overfished stocks are in need of rebuilding plans, including ocean pout, Gulf of Maine haddock, Cape Cod yellowtail flounder, mid-Atlantic yellowtail flounder, white hake, Gulf of Mexico red grouper, Gulf of Mexico greater amberjack, and North Atlantic albacore.
- An additional four stocks have been newly declared overfished this year and will require rebuilding plans, including southern New England windowpane flounder, Atlantic pollock, Pacific whiting and yelloweye rockfish. The respective Councils have one year from the date they were declared *overfished*, to submit a plan. However, Atlantic pollock was found to be *not overfished* after the August 1, 2002, cutoff date for this report.

In addition,

- Interim rebuilding plans are in place for lingcod, darkblotched rockfish, Pacific ocean perch, bocaccio, canary rockfish, cowcod, and widow rockfish.
- Rebuilding programs for Gulf of Maine cod, Georges Bank cod, Georges Bank haddock, southern New England yellowtail flounder, and Atlantic halibut are being reconsidered due to new rebuilding criteria required by a recent court ruling.
- Three rebuilding plans are no longer required because rebuilding has been achieved under the plan (Georges Bank Atlantic sea scallop (rebuilt in 2000), mid-Atlantic sea scallop (2001), and Gulf of Maine/northern Georges Bank silver hake (2002)). However, rebuilding management measures for these stocks are still in effect until changed by regulatory action.

Tracking Progress

In addition to the progress overall regarding overfished stocks, there have been notable gains in the stock size for specific stocks or stock complexes, including those that remain overfished or where overfishing is occurring. For

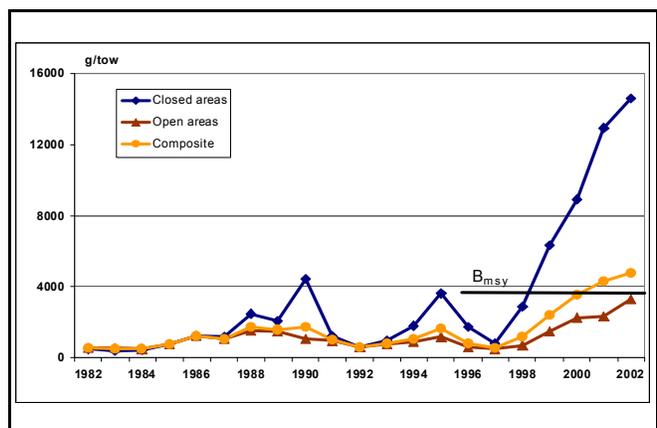


Figure 8. Changes in abundance for the mid-Atlantic sea scallop stock (courtesy of NEFMC).

example, the overall stock size for **New England groundfish** has steadily increased from about 170,000 metric tons in 1994 to over 450,000 metric tons in 2001 (See **Figure 4 in Executive Summary**). Similar gains have been seen in the Georges Bank and **mid-Atlantic sea scallop** stocks (**Figure 8**). Sea scallops, managed in the Northeast region under the *Sea Scallop FMP*, support an important, high value fishery off the New England and mid-Atlantic coasts. The FMP was implemented in 1982 and currently controls fishing effort through limited entry, restrictions on days vessels

can fish at sea, gear measures, crew limits, and closed areas implemented under the *Northeast Multispecies FMP*. These measures have played a key role in protecting sea scallop spawning stocks and reducing fishing mortality. The 2001 scallop survey indicated that the stratified mean scallop catch per tow was 4.3 kg of cleaned meat weight (meats) for the mid-Atlantic stock. This level is above the B_{MAX} threshold of 3.9 kg/tow (meats) and indicates that the stock is fully rebuilt. Results in 2002 were even higher.

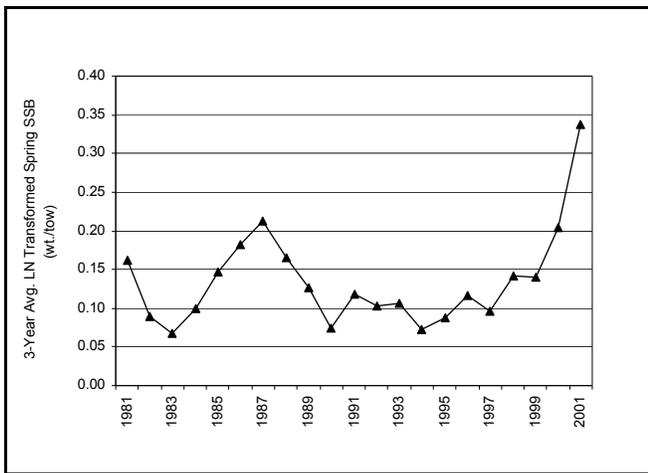


Figure 9. Changes in Spawning Stock Biomass (SSB) estimates for black sea bass (courtesy of MAFMC).

A **Black Sea Bass** FMP was first considered for development in 1990. By 1996, management measures were developed and incorporated into Amendment 9 of the *Summer Flounder, Scup and Black Sea Bass FMP*. These management measures included commercial quotas, gear requirements, minimum size limits, recreational harvest limits, and permit and reporting requirements.

Since the implementation of management measures for this fishery, stock size has increased to a record high level. Although the stock is rebuilding and fishing mortality rates have declined, the stock is still

considered overfished and overfishing is still occurring. However, survey information indicates that the exploitable biomass in 2001 was the highest it has been since 1976; the three-year average biomass increased by 65 percent from 2000 to 2001 (**Figure 9**). In addition, relative exploitation rates have also dropped significantly indicating a reduction in fishing mortality. Similar improvements in stock status can be seen in the summer flounder and scup stocks.

The **Gulf of Mexico group king mackerel** fishery is an example of a fishery that primarily occurs in the EEZ and at the inception of the SFA was not formally managed in federal waters. Upon development of the *Coastal Migratory Pelagics FMP*, Gulf group king mackerel were considered to be in a somewhat severe state of being overfished and undergoing overfishing. Since development of the original FMP, additional management measures have been adopted

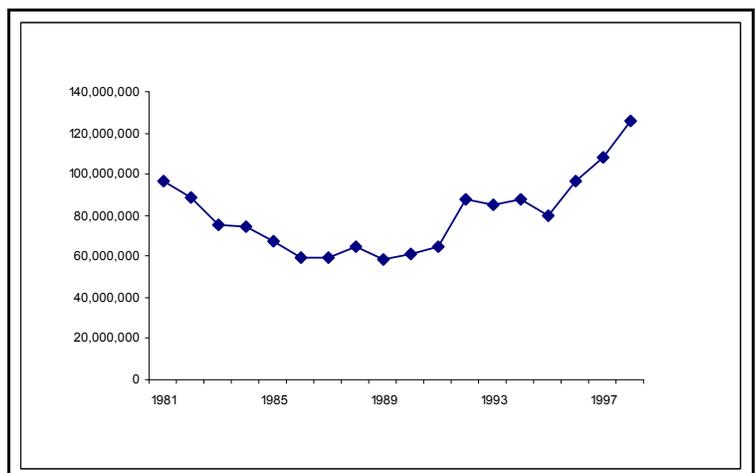


Figure 10. Gulf king mackerel SSB estimates, in millions of pounds (courtesy of GMFMC).

through amendments and regulatory actions that over the years have allowed this stock to improve, although it still remains overfished (Figure 10).

The Councils this year have responded to some daunting challenges. In May 2002, the PFMC learned that three overfished stocks, bocaccio, yelloweye and canary rockfish, were rebuilding more slowly than expected. Over the course of the year, the Council developed, and NOAA Fisheries implemented, a series of new measures for both 2002 and 2003 fisheries. The three affected stocks are caught in many commercial and recreational fisheries. All are large, long-lived, late maturing, and slow-growing species, making them particularly vulnerable to overfishing. Historically, these three species were taken by trawl, line and sport gear. Trawl catches of rockfish have been reduced by footrope restrictions put in place on the shelf since 2000, which keep trawlers out of most rockfish habitat.

Formal rebuilding plans for bocaccio, canary rockfish, and yelloweye rockfish will be developed in 2003. Even under zero fishing pressure, the predicted time required to rebuild these species is estimated to be more than 50 years. Starting in 2003, conservative area and season restrictions will be implemented to begin to rebuild these stocks and the six other groundfish stocks designated as overfished. Fisheries that have a significant bycatch of these species will be dramatically restructured. These actions will affect not only the many different groundfish fisheries, but also fisheries targeting non-groundfish species. The effects will span commercial, recreational, tribal, and even research fisheries. However, fisheries with very low incidental bycatch of these three species will be minimally affected by these actions.

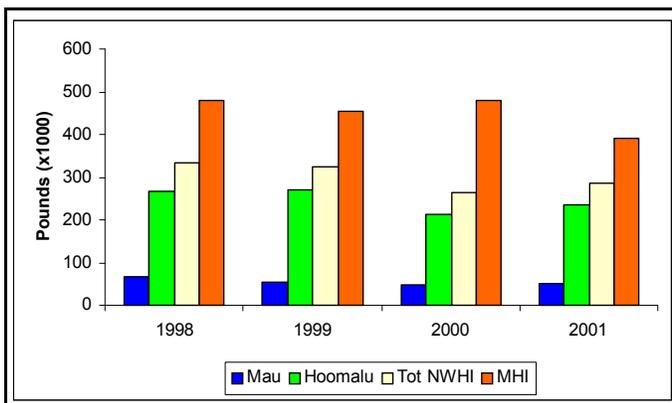


Figure 11. Annual landings of bottomfish stocks in 4 western Pacific regions (courtesy of WPFMC).

In the Western Pacific Region, the bottomfish stocks as a whole are healthy. The Northwestern Hawaiian Islands (NWHI) bottomfish fishery is small, highly productive, and well managed. The fishery balances the fishery in the Main Hawaiian Islands (MHI), where localized depletion is known to occur. The focus in the Western Pacific region is now on recovering bottomfish stocks in the MHI where landings have declined between 2000 and 2001 (Figure 11).

Management efforts have made the **Bering Sea pollock** fishery the largest single-species fishery in the United States. In 1998, Congress passed the American Fisheries Act, which allowed fishermen and processors to form fishery cooperatives that now manage much of the day-to-day operations of the Bering Sea pollock fishery. NOAA Fisheries monitors the health of the stock and the overall harvests by the cooperatives. Since 1998, product utilization rates for Bering Sea pollock have increased 24 percent. At the same time, salmon bycatch has dropped 50 percent in what was already one of the world's cleanest fisheries. The discard rate for pollock has decreased from 11 percent in 1990 to 1.3 percent in 2001. Management of this fishery, including the establishment of the cooperatives, eliminated the race for fish, and allows pollock fishing to be dispersed over time and area, reducing potential impacts on endangered Steller sea lions. The resultant ability to have a constant level of fishing for the past 10 years has provided stability to the fishing industry and maintained high biomass levels (**Figure 12**).

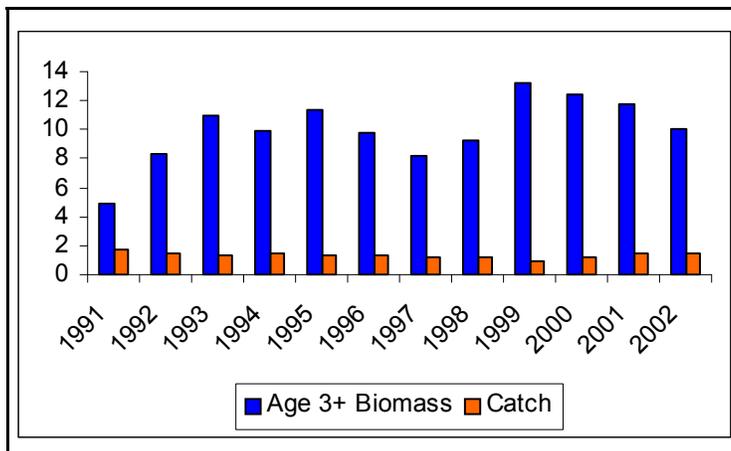


Figure 12. Eastern Bering Sea pollock, biomass vs. catch, in million metric tons (courtesy of FAKR).

Table 1. Summary of Stock Status by Council Area, 2001 and 2002.

Jurisdiction	Year	Number of Stocks	Overfishing?*					Overfished?*					Approaching Overfished Condition
			Yes	No	Not Known	Not Defined	N/A#	Yes	No	Not Known	Not Defined	N/A#	
NEFMC	2001	37	7	23	7	0	0	10	21	3	2	0	1
	2002	38	8	14	14	2	0	15	20	2	1	0	0
MAFMC	2001	11	4	7	0	0	0	4	5	1	1	0	0
	2002	11	4	7	0	0	0	4	5	1	1	0	0
NEFMC/ MAFMC	2001	3	3	0	0	0	0	2	1	0	0	0	0
	2002	3	3	0	0	0	0	1	1	0	1	0	0
SAFMC	2001	88	13	21	52	2	0	15	4	61	8	0	0
	2002	88	12	21	53	2	0	14	14	53	8	0	0
GMFMC	2001	57	5	13	37	2	0	6	4	38	8	0	1
	2002	57	4	14	37	2	0	6	5	38	8	0	0
SAFMC/ GMFMC	2001	10	0	6	3	1	0	1	5	3	1	0	0
	2002	10	0	6	3	1	0	1	5	3	1	0	0
CFMC	2001	179	1	9	154	15	0	3	1	138	37	0	0
	2002	179	1	9	154	15	0	3	1	138	37	0	0
NE, MA, and SAFMC	2001	1	0	0	1	0	0	0	0	1	0	0	0
	2002	1	0	0	1	0	0	0	0	1	0	0	0
PFMC	2001	168	0	41	68	2	57	7	30	69	4	57	1
	2002	165	1	39	65	7	53	9	28	66	9	53	0
WPFMC	2001	64	0	15	2	47	0	1	48	14	1	0	0
	2002	63	0	5	13	45	0	1	29	32	1	0	0
NPFMC	2001	243	0	82	161	0	0	2	32	209	0	0	0
	2002	219	0	81	138	0	0	2	30	186	0	0	1
PFMC/ NPFMC	2001	1	0	1	0	0	0	0	0	0	1	0	0
	2002	1	0	1	0	0	0	0	0	0	1	0	0

Table 1. Summary of Stock Status by Council Area, 2001 and 2002, *Cont.*

Jurisdiction	Year	Number of Stocks	Overfishing?*					Overfished?*					Approaching Overfished Condition
			Yes	No	Not Known	Not Defined	N/A#	Yes	No	Not Known	Not Defined	N/A#	
HMS	2001	83	29	8	46	0	0	29	8	46	0	0	0
	2002	83	30	7	46	0	0	29	8	46	0	0	0
ASMFC	2001	12	3	3	5	1	0	1	3	5	3	0	0
	2002	12	3	3	5	1	0	1	3	5	3	0	0
GSMFC	2001	2	0	1	1	0	0	0	1	1	0	0	0
	2002	2	0	1	1	0	0	0	1	1	0	0	0
Total	2001	959	65	230	537	70	57	81	163	589	66	57	3
	2002	932	66	208	530	75	53	86	150	572	70	53	1

* Determination based on fishing mortality rate.

** Determination based on stock level.

Not applicable, generally due to exemption in FMP, as specified in Appendix 1.

Table 2. Description of Major and Minor Stocks by Council, 2002.

Jurisdiction	Stock Group	# of Stocks	2001 Landings (1,000 Pounds) [@]	Overfishing? [*]					Overfished? ^{**}					Approaching Overfished Condition
				Yes	No	Not Known	Not Defined	N/A [#]	Yes	No	Not Known	Not Defined	N/A [#]	
NEFMC	Major	29	444,485	8	12	8	1	0	10	16	2	1	0	0
	Minor	9	67	0	2	6	1	0	5	4	0	0	0	0
	Total	38	444,552	8	14	14	2	0	15	20	2	1	0	0
MAFMC	Major	11	251,667	4	7	0	0	0	4	5	1	1	0	0
	Minor	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	11	251,667	4	7	0	0	0	4	5	1	1	0	0
NEFMC / MAFMC	Major	3	56,419	3	0	0	0	0	1	1	0	1	0	0
	Minor	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	3	56,419	3	0	0	0	0	1	1	0	1	0	0
SAFMC	Major	24	38,040	9	9	6	0	0	8	10	6	0	0	0
	Minor	64	1,770	3	12	47	2	0	6	4	47	7	0	0
	Total	88	39,810	12	21	53	2	0	14	14	53	7	0	0
GMFMC	Major	23	307,511	4	7	10	2	0	4	5	11	3	0	0
	Minor	34	1,235	0	7	27	0	0	2	0	27	5	0	0
	Total	57	308,746	4	14	37	2	0	6	5	38	8	0	0
SAFMC / GMFMC	Major	8	47,432	0	6	2	0	0	1	5	2	0	0	0
	Minor	2	110	0	0	1	1	0	0	0	1	1	0	0
	Total	10	47,542	0	6	3	1	0	1	5	3	1	0	0
CFMC	Major	4	12,490	1	1	2	0	0	1	1	2	0	0	0
	Minor	175	0	0	8	152	15	0	2	0	136	37	0	0
	Total	179	12,490	1	9	154	15	0	3	1	138	37	0	0
NE, MA, and SAFMC	Major	1	1,348	0	0	1	0	0	0	0	1	0	0	0
	Minor	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	1	1,348	0	0	1	0	0	0	0	1	0	0	0

Table 2. Description of Major and Minor Stocks by Council, 2002, *Cont.*

Jurisdiction	Stock Group	# of Stocks	2001 Landings (1,000 Pounds) [@]	Overfishing? [*]					Overfished? ^{**}					Approaching Overfished Condition
				Yes	No	Not Known	Not Defined	N/A [#]	Yes	No	Not Known	Not Defined	N/A [#]	
PFMC	Major	64	913,632	1	35	15	2	11	7	27	15	4	11	0
	Minor	101	1,867	0	4	50	5	42	2	1	51	5	42	0
	Total	165	915,499	1	39	65	7	53	9	28	66	9	53	0
WPFMC	Major	13	39,824	0	0	0	13	0	0	9	4	0	0	0
	Minor	50	17,911	0	5	13	32	0	1	20	28	1	0	0
	Total	63	57,735	0	5	13	45	0	1	29	32-	1	0	0
NPFMC	Major	50	4,849,592	0	44	6	0	0	0	29	21	0	0	0
	Minor	169	2,019	0	37	13.2	0	0	2	1	165	0	0	1
	Total	219	4,851,611	0	81	138	0	0	2	30	186	0	0	1
PFMC / NPFMC	Major	1	77,457	0	1	0	0	0	0	0	0	1	0	0
	Minor	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	1	77,457	0	1	0	0	0	0	0	0	1	0	0
HMS	Major	15	50,872	8	4	3	0	0	7	5	3	0	0	0
	Minor	68	557	22	3	43	0	0	22	3	43	0	0	0
	Total	83	51,429	30	7	46	0	0	29	8	46	0	0	0
ASMFC	Major	11	728,306	3	2	5	1	0	0	3	5	3	0	0
	Minor	1	0	0	1	0	0	0	1	0	0	0	0	0
	Total	12	728,306	3	3	5	1	0	1	3	5	3	0	0
GSMFC	Major	2	1,173,546	0	1	1	0	0	0	1	1	0	0	0
	Minor	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	2	1,173,546	0	1	1	0	0	0	1	1	0	0	0
TOTAL	Major	259	8,991,481	41	129	59	19	11	43	117	74	14	11	0
	Minor	673	25,536	25	79	471	56	42	43	33	498	56	42	1
	Total	932	9,017,017	66	208	530	75	53	86	150	572	70	53	1

[@] Landings are provided as an illustration only and reflect all landings attributed to a species--that is, landings seaward of the area of jurisdiction for each managing body, and may thus not be reflective of those landings used for management purposes, where the management unit is only a portion of that range.

^{*} Determination based on fishing mortality rate.

^{**} Determination based on stock level.

[#] Not applicable, generally due to exemption in FMP, as specified in Appendix 1.

INTER-ANNUAL STOCK-BY-STOCK COMPARISONS OF STOCK STATUS

Inter-annual comparisons of aggregate statistics from this report have in the past proved problematic. Difficulties arise due to changes in the composition of stocks as well as revisions to the definitions of overfishing and overfished included in the report each year. In addition, other confounding factors make an interannual comparison of aggregate numbers problematic. Stocks may change status for any of several different reasons. Not all of these changes relate to the question, “To what extent has the status of stocks improved?”

Stocks may change status for any of several different reasons. Not all of these changes relate to the question, “To what extent has the status of stocks improved?”

Reasons for inter-annual changes may include:

- (i) Each year some stocks are removed from the report, while others are added. The total number of stocks included in the reports from 1997 to 2002 has changed each year (see **Figure 1**). The mix of stocks is also somewhat different each year (e.g. between 2000 and 2001, 72 stocks were added and 18 deleted).
- (ii) Some stocks still do not have fully approved status determination criteria under the SFA but do have pre-existing overfishing definitions. In 2000 and beyond, such stocks have often been evaluated using the pre-SFA definitions, whereas in 1999 and prior years, stocks without post-SFA status determination criteria were mostly categorized as *undefined*. In fact, the reason for many of the changes in status between 1999 and 2000 was that NOAA Fisheries revised its previous decision to categorize most stocks without approved post-SFA overfishing definitions as *undefined* or *unknown*, and instead began using pre-SFA definitions in such cases. This change resulted in a large number of stocks (33) changing from *unknown* or *undefined* to *not subject to overfishing*, but not necessarily because their status had improved between years. Additionally, 21 stocks changed from *unknown* or *undefined* to *overfished*, and 8 stocks changed from *unknown* or *undefined* to *not overfished*, again not necessarily because of actual changes in stock status. In 2002, a few stocks even reverted from being categorized under post-SFA definitions back to pre-SFA definitions.
- (iii) In some cases, definitions of overfishing and overfished have changed between years.
- (iv) In each year, there are a few incorrect categorizations.
- (v) Many stocks have moved from the categories of *overfishing*, *not subject to overfishing*, *overfished*, or *not overfished* to *unknown*, *undefined*, or *N/A*, or vice versa; this distorts inter-year comparisons of aggregate numbers classified in each of the different categories.
- (vi) In some cases, the actual status of a stock or stock complex has changed in terms of either crossing a fishing mortality threshold or crossing a biomass threshold.

The purpose of the current analysis was to separate out those changes due to *reason* (vi) from other, less relevant changes. This was accomplished by tracking changes in the status of each individual fish stock through all of the years it was included in the reports. Each time there was a change in status between the categories of *yes* (Y), *no* (N), *approaching* (A), or *unknown, undefined* or *N/A* (the latter 3 being grouped together as *Unk*), it was recorded. Stocks added to or deleted from the report in a given year were included in the analysis if they had a status at the time of coming in or going out (in which case, they were included in the categories of status = *Unk* becoming Y, N, or A; or Y, N, or A becoming *Unk*, respectively) but stocks that entered or left the report with a status of *Unk* were not included in the analysis for that particular year. This exercise was repeated separately for the overfishing and overfished classifications. By this means, the biases associated with comparisons of aggregate statistics due to *reasons* (i), (ii) and (v) were removed, and every attempt was made to correct for *reason* (iv) retrospectively. However, this simple procedure did not account for changes due solely to *reason* (iii), rather than actual changes in status.

In order to eliminate the effects of *reason* (iii), all stocks that had more than one status change between 1997 and 2002 (27 stocks for *overfishing* and 25 stocks for *overfished*) were re-evaluated by applying the 2002 status determination criteria to all previous years as well, based only on the most recent stock assessment. In some cases, this did not result in a change to any of the previous records, while in others (particularly some of the New England groundfish), it did. These will be referred to as the “corrected” numbers.

**The Stocks for Which
Overfishing Has Been
Eliminated Comprise Many
Commercially and
Recreationally Valuable
Major Species.**

Table 3 summarizes the results for stock status with respect to *overfishing*. Since 1997, *overfishing* has been eliminated a total of 28 times (corrected number, 26). The (corrected) 26 cases where *overfishing* has been eliminated comprise 16 commercially or recreationally valuable *major* stocks, including one replicate (**Table 4**). *Overfishing* has also been eliminated for 10 *minor* species (**Table 4**). Of these, 6 stocks (goliath grouper and Nassau grouper from the South Atlantic, Gulf of Mexico and Caribbean areas) were declared to have improved to a status of *not subject to overfishing* in the year 2000 because these fisheries were closed to fishing in the EEZ; however, fisheries on these six stocks had actually been closed several years previously. For 3 of the major stocks (Atlantic witch flounder, Cape Cod yellowtail flounder, and Gulf of Mexico red drum), *overfishing* was eliminated once during the 1997-2002 period, but has since resumed. Gulf of Maine haddock is the only stock for which *overfishing* has been eliminated twice (with a switch back to experiencing *overfishing* in between). These switches are due to the fact that exploitation rates have fluctuated around the overfishing threshold (based on the most recent stock assessment, not previous ones). Currently, the stock is not experiencing *overfishing*.

On the minus side, *overfishing* commenced a total of 13 times (corrected number, 12) between 1997 and 2002, giving a net positive result of 15 (28 minus 13) for the raw numbers and 14 (26 minus 12) for the corrected numbers (**Tables 3 and 4**). In 3 cases (Gulf of Maine haddock, Atlantic loligo squid, and Gulf of Mexico gag grouper), the negative change in *overfishing* status occurred earlier in the 1997 - 2002 time period, and has since been rectified. In the case of Atlantic bigeye tuna (a major species experiencing *overfishing*), the status of this highly migratory species is largely not within control of NOAA Fisheries or the Councils.

Table 5 summarizes the results for stock status with respect to the *overfished* condition. Since 1997, a total of 24 (corrected number, 20) *previously-overfished* stocks have been rebuilt sufficiently in biomass for their status to have transitioned to *not overfished*. The corrected numbers comprise 17 commercially or recreationally valuable *major* species and 3 *minor* species (**Table 6**). Of these, Southern New England/mid-Atlantic windowpane flounder was recorded as having transitioned to a status of *not overfished* in 1999, but has since reverted to an *overfished* condition. Pacific sardine and Pacific (chub) mackerel were previously declared as *overfished* based on OLO, but had already rebuilt substantially at the time they were brought under federal management.

Many of the above stocks have exhibited dramatic increases in biomass over the last few years (e.g., see **Figure 4 and page 14**). In addition, there are several stocks that are now fully rebuilt but are not included in the above list because they have never been classified as *overfished*, due to the fact that at the time the biomass criterion was first applied, they were already in the process of rebuilding. Two notable examples are Georges Bank sea scallops and mid-Atlantic sea scallops, both of which would have been classified as *overfished* in 1997 if the biomass criterion had been applied then, but had crossed the biomass threshold by 1999, the first year the biomass criterion was actually used, and had fully rebuilt by 2000 on Georges Bank (although not acknowledged until the 2001 report), and by 2001 in the mid-Atlantic.

On the minus side, between 1997 and 2002, there were 15 (corrected number, 7) occurrences of stocks that had declined sufficiently in biomass to become classified as *overfished* (**Table 5**). This results in a net positive gain of 9 (24 minus 15) for the raw numbers and 13 (20 minus 7) for the corrected numbers. The (corrected) 7 stocks whose status has worsened comprise 6 major stocks and one minor stock (**Table 6**).

There has been steady, incremental improvement in the status of stocks managed under the MSA. In fact, the rate of progress in only five years has been remarkable given the constraints imposed...Such progress can be attributed to concerted efforts by NOAA Fisheries, the Councils, the states, and commercial and recreational fishing interests to end *overfishing* and rebuild depleted fish stocks.

Tables 3-6 confirm that there has been steady, incremental improvement in the status of stocks managed under the MSA. In fact, the rate of progress in only five years has been remarkable given the constraints imposed by restrictive budgets, data shortfalls, lengthy procedural requirements for developing and implementing FMPs and amendments, the need to mitigate short-term negative socio-economic impacts of restrictive management measures and, most importantly, protracted rebuilding periods due to the biology of most exploited fish and invertebrate species, along with the unpredictable vagaries of nature. Such progress can be attributed to concerted efforts by NOAA Fisheries, the Councils, the states, and commercial and recreational

fishing interests to end *overfishing* and rebuild depleted fish stocks in order to enhance the long-term viability of U.S. fisheries.

Tables 3 and 5 also confirm the efforts made by NOAA Fisheries and the Councils to assess the status of previously unknown stocks. Over the period 1997 to 2002, a total of 148 (corrected number, 135) stocks have had their status change from *Unk* to either Y, N, or A in terms of *overfishing*; while a total of 111 (corrected number, 106) stocks have had their status change from *Unk* to either Y, N, or A in terms of *overfished*. While these numbers are somewhat diluted by the reverse trend where the status changed from something definite to *Unk* (63 cases for *overfishing* and 48 cases for *overfished*; corrected numbers 50 and 41, respectively), the latter situation is mainly due to splitting stock complexes (e.g., sculpins) into individual component species and stocks, a decline in the tendency to classify stocks on the basis of indicator species, or a determination that previous stock assessment results had become outdated. Thus, there has been a net gain of 85 (148 minus 63) for the raw numbers and 85 (135 minus 50) for the corrected numbers for stocks changing status from *Unk* to something definite in terms of *overfishing*; and a net gain of 63 (111 minus 48) for the raw numbers and 65 (106 minus 41) for the corrected numbers for stocks changing status from *Unk* to something definite in terms of whether or not they are *overfished*.

In summary, considerable steady, incremental progress has been made in bringing U.S. fisheries into conformance with National Standard 1. It should also be noted that this report does not capture the totality of the progress that has been made towards ending *overfishing* and rebuilding depleted fish stocks. Because the “events” recorded in the

tables are restricted to those where a fishing mortality or biomass threshold is crossed, or there is some other type of transition between categories, there is no acknowledgment of those cases where there have been substantial reductions in fishing mortality or substantial increases in biomass towards thresholds that have not yet been crossed. In addition, stocks that had already exhibited improvements in status as a result of previous rebuilding efforts may or may not be represented (see above for the Georges Bank and mid-Atlantic sea scallops examples). On the other hand, given the number of stocks currently experiencing *overfishing* (66) or currently in an *overfished* state (86), it is evident that there is still much to be accomplished.

Table 3: Interannual stock-by-stock comparisons of stock status with respect to whether or not *overfishing* was occurring.

Status change	Better or Worse	'97 → '98	'98 → '99	'99 → '00	'00 → '01	'01 → '02	Total
Y → N	Better	2	3	13 (12)	7 (6)	3	28 (26)
N → Y	Worse	1	2	2	3	5 (4)	13 (12)
Y → Unk	?		2		4 (2)	1 (0)	7 (4)
Unk → Y	?	6	13 (11)	6 (5)	1 (0)		26 (22)
N → Unk	?	21		8	2 (1)	25 (16)	56 (46)
Unk → N	?	38	17 (16)	43 (41)	18 (12)	5	121 (112)
A → Y	Worse						
Y → A	Better						
A → N	Better	1	6				7
N → A	Worse						
A → Unk	?						
Unk → A	?	1					1

Y = Yes; N = No; Unk = *Unknown* or *undefined* or *N/A*; A = Approaching a situation of *overfishing*.

* Numbers in parentheses have been “corrected” for changes in overfishing definitions between years by retrospectively applying the 2002 definitions and the most recent stock assessments to all previous years (see text).

Table 4: Cases where *overfishing* has been eliminated or initiated between 1997 and 2002.

Stocks for which <i>overfishing</i> eliminated	Stocks for which <i>overfishing</i> initiated
<i>Major stocks</i>	<i>Major stocks</i>
<i>Gulf of Maine haddock (x2)</i>	<i>Georges Bank cod</i>
<i>Atlantic witch flounder</i>	<i>Gulf of Maine haddock</i>
<i>Cape Cod yellowtail flounder</i>	<i>Atlantic witch flounder</i>
<i>Gulf of Maine/Georges Bank windowpane flounder</i>	<i>Cape Cod yellowtail flounder</i>
<i>Georges Bank winter flounder</i>	<i>Northern (Gulf of Maine) shrimp</i>
<i>Southern New England winter flounder</i>	<i>Atlantic loligo squid</i>
<i>Atlantic bluefish</i>	<i>Gulf of Mexico vermilion snapper</i>
<i>Atlantic loligo squid</i>	<i>Gulf of Mexico gag grouper</i>
<i>South Atlantic scamp</i>	<i>Gulf of Mexico red drum</i>
<i>South Atlantic white grunt</i>	<i>Pacific whiting</i>
<i>Gulf of Mexico king mackerel</i>	<i>Atlantic bigeye tuna</i>
<i>Gulf of Mexico gag grouper</i>	<i>Atlantic finetooth shark</i>
<i>Gulf of Mexico red drum</i>	
<i>Pacific darkblotched rockfish</i>	
<i>Pacific bank rockfish</i>	
<i>Minor stocks</i>	
<i>South Atlantic red porgy</i>	
<i>South Atlantic goliath grouper</i>	
<i>South Atlantic Nassau grouper</i>	
<i>South Atlantic wreckfish</i>	
<i>Gulf of Mexico goliath grouper</i>	
<i>Gulf of Mexico Nassau grouper</i>	
<i>Caribbean goliath grouper</i>	
<i>Caribbean Nassau grouper</i>	
<i>Pacific yelloweye rockfish</i>	
<i>Pacific silveryeye rockfish</i>	

Table 5. Interannual stock-by-stock comparisons of stock status with respect to whether or not the stock was *overfished*.

Status change	Better or Worse	'97 → '98	'98 → '99	'99 → '00	'00 → '01	'01 → '02	Total
Y → N	Better	1	6	7 (5)	6 (3)	4 (5)	24 (20)
N → Y	Worse	2 (1)	2	1	3 (2)	7 (1)	15 (7)
Y → Unk	?	1 (0)	4 (3)		11 (10)	1 (0)	17 (13)
Unk → Y	?	1	10 (13)	36 (33)	1	1	49 (49)
N → Unk	?		2	4 (3)		23 (22)	29 (27)
Unk → N	?		12 (11)	22 (20)	12	13 (11)	59 (54)
Y → A	Better			1			1
A → Y	Worse		1	1	2	2	6
N → A	Worse		1 (0)		1	1	3 (2)
A → N	Better		1	1	1	1	4
A → Unk	?			1	1 (0)		2 (1)
Unk → A	?			2	1		3

Y = Yes; N = No; Unk = *Unknown* or *undefined* or *N/A*; A = Approaching an *overfished* condition.

* Numbers in parentheses have been “corrected” for changes in definitions of overfished between years by retrospectively applying the 2002 definitions and the most recent stock assessments to all previous years (see text).

Table 6: Cases where stocks have transitioned from *overfished* to *not overfished*, and from *not overfished* to *overfished*, between 1997 and 2002.

Stocks that have transitioned from <i>overfished</i> to <i>not overfished</i>	
<p style="text-align: center;"><i>Major stocks</i></p> <p><i>Atlantic (Acadian) redfish</i></p> <p><i>Gulf of Maine/Georges Bank windowpane flounder</i></p> <p><i>Southern New England/ mid-Atlantic windowpane flounder</i></p> <p><i>Georges Bank winter flounder</i></p> <p><i>Gulf of Maine/Northern Georges Bank silver hake (now fully rebuilt)</i></p> <p><i>Southern Georges Bank/ mid-Atlantic silver hake</i></p> <p><i>Gulf of Maine/Northern Georges Bank red hake (now fully rebuilt)</i></p> <p><i>the northern stock of Atlantic monkfish</i></p> <p><i>Atlantic winter skate</i></p> <p><i>Atlantic scup</i></p> <p><i>Atlantic loligo squid</i></p> <p><i>Atlantic weakfish</i></p> <p><i>South Atlantic gag grouper</i></p> <p><i>Strait of Juan de Fuca coho salmon</i></p> <p><i>Pacific (chub) mackerel</i></p> <p><i>Pacific sardine</i></p> <p><i>Bering Sea snow crab</i></p> <p style="text-align: center;"><i>Minor stocks</i></p> <p><i>Atlantic smooth skate</i></p> <p><i>Snohomish River summer/ fall chinook salmon</i></p> <p><i>Pacific coast chum salmon</i></p>	<p style="text-align: center;"><i>Major stocks</i></p> <p><i>Southern New England/ mid-Atlantic windowpane flounder</i></p> <p><i>South Atlantic black sea bass</i></p> <p><i>Gulf of Mexico greater amberjack</i></p> <p><i>Pacific whiting</i></p> <p><i>Atlantic bigeye tuna</i></p> <p><i>Atlantic albacore</i></p> <p style="text-align: center;"><i>Minor stocks</i></p> <p><i>Atlantic ocean pout</i></p>