



**NOAA  
FISHERIES**

# Status of Stocks 2012

## Annual Report to Congress on the Status of U.S. Fisheries



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*Deputy Assistant Administrator  
for Regulatory Programs,  
performing the functions  
and duties of the Assistant  
Administrator for Fisheries*

### A Message from the Assistant Administrator for Fisheries

NOAA Fisheries is pleased to present the 2012 *Report on the Status of U.S. Fisheries* pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA). This year's report highlights the continued, significant progress that, collectively, NOAA Fisheries, the Regional Fishery Management Councils, and our stakeholders have made to end overfishing and rebuild fish stocks. In 2012, we determined that 10 stocks are no longer subject to overfishing, four stocks are no longer overfished, and six stocks have rebuilt—bringing the total number of rebuilt stocks to 32 since 2000. These results show the clear benefit of science-based management in U.S. fisheries. 2012 is the first full year that all federal fisheries operated under annual catch limits to end and prevent overfishing. As additional stock assessments are completed, we expect the number of stocks on the overfishing list—now at an all-time low—to decrease further as a result of management under annual catch limits.

It is critical that we recognize the sacrifices that have been made and will be made to achieve these gains. Thus, it is important to remember that even stocks currently on the overfishing and overfished lists are being sustainably managed. Annual catch limits to end overfishing and rebuilding plans for overfished stocks mean our fisheries are actively managed to achieve the greatest benefit for the nation. Sustainable fisheries provide nutritious seafood to consumers, income to fishing families, highly valued recreational opportunities for millions of anglers, and an enduring economic basis for coastal communities.

Looking ahead, we acknowledge we have more work to do. To build on our successes and fully achieve both biological and economic benefits of sustainable fisheries through science-based management, we will need to ensure the timely collection of data, develop more robust and frequent stock assessments, better assess the economic consequences of management actions, and improve our understanding of environmental factors—including climate change—affecting fishery resources. We also need to strengthen participation in the management process by our partners and stakeholders within the fishing and seafood industries, recreational anglers, fishing communities, and the public. The Council process offers a collaborative and transparent venue for all parties to offer management solutions to difficult fisheries problems. We are committed to ensuring that this process remains a valuable means for stakeholder engagement.

We view sustainability as a process rather than an end point. This report shows that fishery management under the MSA is working to address past overfishing problems and scientifically assess the status of stocks. With the support of the Councils, commercial and recreational fishermen, and all of our other partners, we will continue to sustainably manage U.S. fisheries for the benefit of the nation.

### Summary of Changes

STATUS	2011 (%)	2012 (%)
Overfishing	36 (14%)	29 (10%)
Overfished	45 (21%)	41 (19%)
Rebuilt	27	32*

\*Although 6 new stocks are reported as rebuilt in 2012, the incremental change from 2011 is only 5 because Southern Tanner crab—Bering Sea, which was declared rebuilt in 2007 and again in 2012, is counted only once in the total number of rebuilt stocks.

446 stocks and stock complexes are currently managed within 46 federal fishery management plans nationwide.

## Status Determination Listings for All Stocks

OVERFISHING LIST	# (%) OF STOCKS/ STOCK COMPLEXES
<b>Known status</b>	<b>284</b>
Not subject to overfishing	255 (90%)
Subject to overfishing	29 (10%)
<b>Unknown status</b>	<b>165</b>
OVERFISHED LIST	# (%) OF STOCKS/ STOCK COMPLEXES
<b>Known status</b>	<b>219</b>
Not overfished	178 (81%)
Overfished	41 (19%)
<b>Unknown status</b>	<b>230</b>



Sampling a basket of redfish caught with a mid-water trawl during an Atlantic herring hydroacoustic survey.

## Summary of 2012 Results

The status of our nation's marine fish stocks continues to improve.

- Ten stocks were removed from the overfishing list, while three stocks were added.
- Ten percent of stocks are on the overfishing list, compared with 14 percent in 2011.
- Four stocks were removed from the overfished list, while one was added.
- Nineteen percent of stocks are on the overfished list, compared with 21 percent in 2011.
- Six stocks managed under rebuilding plans have rebuilt to their target levels, bringing the total number of rebuilt stocks to 32 since 2000.

Of the 446 stocks and stock complexes managed in federal fishery management plans we have information to make overfishing status determinations for 284 (64 percent) and overfished status determinations for 219 (49 percent). However, stocks with known status are a high proportion of the most important stocks—those that are targeted by the fisheries and contribute most of the landings. Of the 230 stocks that contribute over 90 percent of total fishery landings, overfishing status is known for 85 percent and overfished status for 77 percent.

Details on all our managed stocks are available online at: [www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm](http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm).

## Stock Status—A Primer

Federal fishery management is based on the concept of maximum sustainable yield (MSY)—the largest long-term average catch that can be taken from a stock under prevailing environmental and fishery conditions. The target level of stock abundance is the biomass (population) that can produce MSY.

### What is the difference between “overfishing” and “overfished?”

A stock that is *subject to overfishing* has a fishing mortality (harvest) rate that is too high to produce its MSY. A determination of overfishing does not necessarily mean that the fishery is not sustainable or that the stock or its ecosystem is being impaired. These negative outcomes are associated with high levels of overfishing over a period of many years. Current management approaches, including annual catch limits and accountability measures to prevent overfishing, greatly reduce the likelihood that damaging levels of overfishing will occur.

A stock that is *overfished* has a biomass level depleted to a degree that the stock's capacity to produce the MSY is jeopardized. In some cases overfishing is the main cause for depletion of the stock, but other factors can affect the abundance of a fish stock and lead to an overfished listing. These factors include abnormal levels of disease, extreme population cycles, habitat degradation, and environmental changes such as climate, ocean acidification, and land-based pollution. When we determine that a stock is overfished, the Council must implement a plan to rebuild it to the level that can support the MSY.

### What does “rebuild” mean?

*Rebuilt* means that a previously overfished stock has increased in abundance to the target level that supports its MSY.

# The Science Behind Status

The MSA requires that a fishery management plan specify objective and measurable criteria, or reference points, for determining when a stock is subject to overfishing or overfished. A scientific analysis of the abundance and composition of a fish stock (stock assessment) evaluates the stock against its reference points. Stock assessments use the best information available, which may include data from fishery landings, scientific surveys, and biological and

ecological studies. A stock assessment typically undergoes peer review by independent scientists before it is accepted by a Council's Scientific and Statistical Committee as the best scientific information available. We use the stock assessment and the reference points to determine whether the stock is *subject to overfishing* or *overfished*. Information from the stock assessment is used by the Council to recommend the annual catch limit for the stock.

## Changes in Stock Status from 2011 to 2012

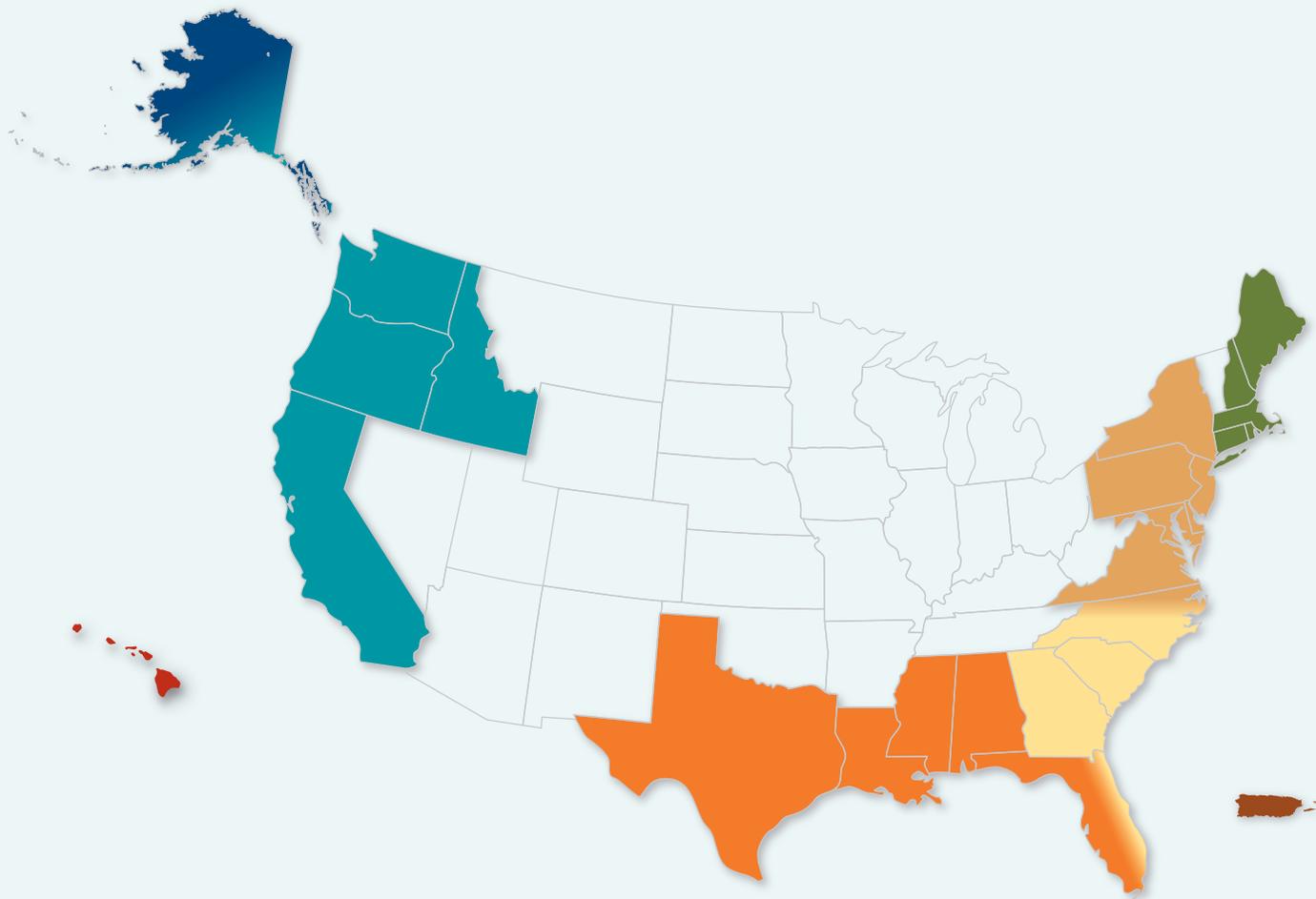
OVERFISHING			
STOCK	REGION	PREVIOUS STATUS 2011	CURRENT STATUS 2012
Windowpane–Southern New England/Mid-Atlantic Yellowtail flounder–Southern New England/Mid-Atlantic	Northeast	Subject to Overfishing	No longer subject to overfishing
Red snapper–Gulf of Mexico Vermilion snapper–South Atlantic Caribbean Queen conch Grouper Unit 1–Caribbean Grouper Unit 4–Caribbean Snapper Unit 1–Caribbean Parrotfishes–Caribbean	Southeast		
Shortfin mako–Atlantic	Highly Migratory Species		
Haddock–Gulf of Maine Yellowtail flounder–Georges Bank	Northeast	Not Subject to Overfishing	Subject to Overfishing ACLs in place*
BSAI Octopus complex	Alaska	Unknown	
In addition, 22 stocks and stock complexes that were previously unknown were found to be not subject to overfishing.			
OVERFISHED			
STOCK	REGION	PREVIOUS STATUS 2011	CURRENT STATUS 2012
Windowpane–Southern New England/Mid-Atlantic Acadian redfish–Gulf of Maine/Georges Bank	Northeast	Not Overfished–Rebuilding	Rebuilt
Yellowtail flounder–Southern New England/Mid-Atlantic	Northeast	Overfished	Not Overfished/Rebuilt
Pink shrimp–South Atlantic	Southeast	Overfished	
Southern Tanner crab–Eastern Bering Sea	Alaska		
Coho salmon–Washington Coast: Strait of Juan de Fuca	Northwest	Overfished	Unknown**
Butterfish–Gulf of Maine/Cape Hatteras	Northeast	Overfished	Approaching an Overfished Condition
Haddock–Gulf of Maine	Northeast	Not Overfished	Overfished***
Atlantic cod–Gulf of Maine	Northeast	Not Overfished–Rebuilding	Overfished***
In addition, 2 stocks that were previously unknown were found to be not overfished.			

\*The status determination is based on the most recent assessment. ACLs to end or prevent overfishing are in place for 2012.

\*\* The overfished status of butterfish is unknown because the most recent assessment was unable to estimate stock size with reasonable confidence.

\*\*\* Atlantic cod is managed under a rebuilding plan. The plan is being revised because inadequate progress toward rebuilding has been made, and ACLs are in place to prevent overfishing.

## Stocks on the Overfishing List in 2012



### ■ North Pacific

1. Bering Sea / Aleutian Islands Octopus Complex

### ■ Pacific and Western Pacific

1. Bigeye tuna—Pacific
2. Pacific bluefin tuna—Pacific

### ■ Gulf of Mexico

1. *Gag*
2. *Gray triggerfish*
3. *Greater amberjack*

### ■ South Atlantic

1. Black sea bass
2. *Gag*
3. *Red grouper*
4. *Red snapper*
5. *Snowy grouper*
6. *Speckled hind*
7. *Warsaw grouper*

### Highly Migratory Species

1. *Albacore*—North Atlantic
2. *Blacknose shark*—Atlantic
3. *Blue marlin*—Atlantic
4. *Bluefin tuna*—West Atlantic
5. *Dusky shark*—Atlantic
6. *Sailfish*—West Atlantic
7. *White marlin*—Atlantic
8. *Scalloped hammerhead*—Atlantic

### ■ New England

1. *Atlantic cod*—Georges Bank
2. *Atlantic cod*—Gulf of Maine
3. *Haddock*—Gulf of Maine
4. *White hake*
5. *Windowpane*—Gulf of Maine/Georges Bank
6. *Witch flounder*
7. *Yellowtail flounder*—Cape Cod/Gulf of Maine
8. *Yellowtail flounder*—Georges Bank

### ■ Mid-Atlantic

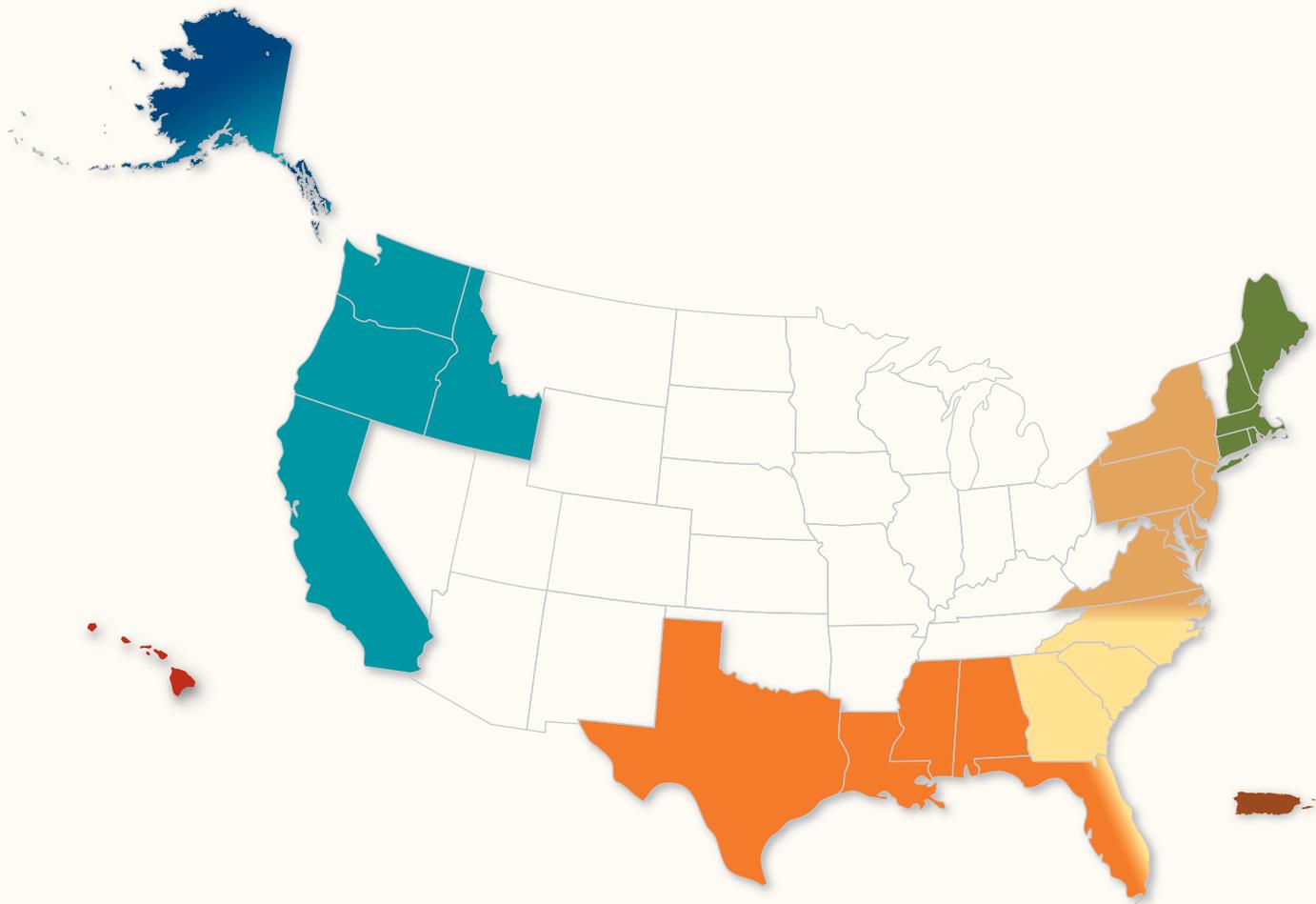
- None

### ■ Caribbean

- None

*Stocks in italics are also on the overfished list.*

# Stocks on the Overfished List in 2012



## North Pacific

1. Blue king crab—Pribilof Islands

## Pacific

1. Canary rockfish
2. Cowcod
3. Pacific ocean perch
4. Chinook salmon—California Central Valley: Sacramento (fall)
5. Yelloweye rockfish

## Western Pacific

1. Seamount Groundfish Complex—Hancock Seamount

## Gulf of Mexico

1. Gag
2. Gray triggerfish
3. Greater amberjack
4. Red snapper

## Caribbean

1. Grouper Unit 1
2. Grouper Unit 2
3. Grouper Unit 4
4. Queen conch

## South Atlantic

1. Red grouper
2. Red porgy
3. Red snapper
4. Snowy grouper

## Highly Migratory Species

1. Albacore—North Atlantic
2. Blacknose shark—Atlantic
3. Blue marlin—Atlantic
4. Bluefin tuna—West Atlantic
5. Dusky shark—Atlantic
6. Porbeagle shark—Atlantic
7. Sandbar shark—Atlantic
8. White marlin—Atlantic
9. Scalloped hammerhead—Atlantic

## New England

1. Atlantic cod—Georges Bank
2. Atlantic cod—Gulf of Maine
3. Atlantic halibut
4. Atlantic salmon
5. Atlantic wolffish
6. Ocean pout
7. Thorny skate
8. White hake
9. Windowpane—Gulf of Maine/Georges Bank
10. Winter flounder—Southern New England/Mid-Atlantic
11. Witch flounder
12. Yellowtail flounder—Cape Cod/Gulf of Maine
13. Yellowtail flounder—Georges Bank

## Mid-Atlantic

- None



Captain Ben Fairley

*Red snapper in the Gulf of Mexico was one of the stocks removed from the overfishing list in 2012, after being on the list since 2000. ACLs designed to prevent overfishing are in place for all stocks, and we expect additional stocks to come off the overfishing list as stock assessments are updated in the coming years.*

## Continuing Improvement

### Ending Overfishing Through Annual Catch Limits

In 2007, Congress enacted a requirement to use annual catch limits (ACL) to prevent overfishing, along with accountability measures to prevent ACLs from being exceeded or mitigate overages that may occur.

By 2012, all federal fisheries, including those for stocks on both the overfishing and overfished lists, were operating under ACLs. As of December 31, 2012, assessments demonstrated that overfishing ended for 58 percent of the domestic stocks that were subject to overfishing in 2007, when the requirement to implement ACLs was added to the MSA. We are actively monitoring ACL performance and will work with the Councils to make any needed adjustments to fully end overfishing.

### Rebuilding and Improving Stocks

When we determine that a stock is overfished, the relevant Council must implement a rebuilding plan. A typical rebuilding plan allows fishing to continue, but at a reduced level so that the stock

will increase to its target level and can produce the MSY. Fifty stocks and stock complexes currently are under rebuilding plans.

Acadian redfish—a Northwest Atlantic stock managed by the New England Fishery Management Council—is a recent rebuilding success story. The fishery for redfish peaked in the 1950s, long before the current fishery management system was established. In 2001, we determined that this long-lived stock was overfished and a 47-year rebuilding plan was put in place in 2004. Based on a 2012 assessment, we determined that the stock had rebuilt much faster than expected, due to successful control of fishing mortality and improved scientific estimates of the stock size.

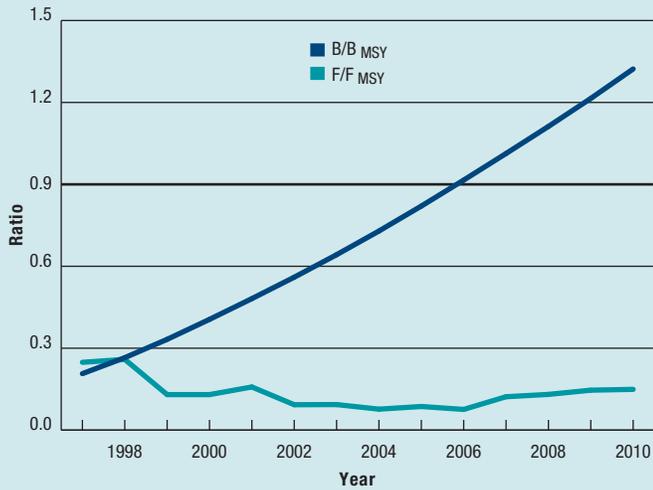
Not all stocks respond to rebuilding plans as dramatically as redfish. We monitor the progress of rebuilding stocks, and make adjustments to plans if needed. Current information on fishing mortality and biomass trends for stocks in rebuilding plans is available online at: [www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm](http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm).



*Acadian redfish was one of six stocks rebuilt in 2012.*

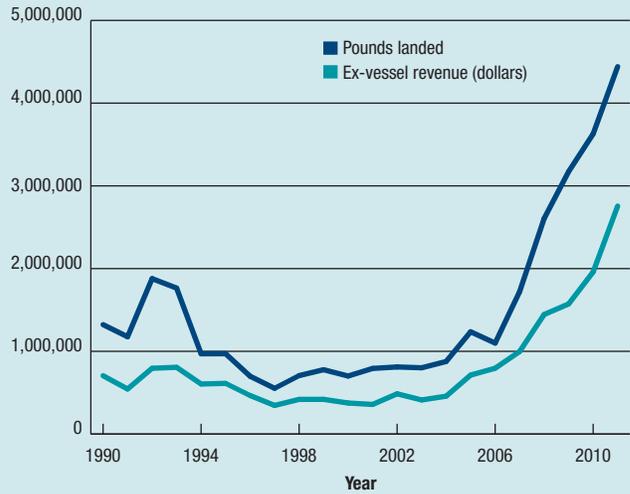
## Rebuilding Success

A rebuilding plan for Acadian redfish was put in place in 2004. The 2012 assessment for this stock shows that fishing mortality was well below the overfishing level ( $F/F_{MSY} = 1$ ), and the stock has rebuilt ( $B/B_{MSY} > 1$ ).



## Rebuilding a Fishery

Landings and value for Acadian redfish since 1990. Rebuilt stocks can produce greater landings and economic benefits. To date, 32 stocks have fully rebuilt.



## FOR MORE INFORMATION

**NOAA Fisheries Home Page**  
[www.nmfs.noaa.gov](http://www.nmfs.noaa.gov)

**Stock Status Updates**  
 See the latest quarterly update and supporting documents: [www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm](http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm)

**FishWatch**  
 Find easy-to-understand science-based facts to help you make smart sustainable seafood choices: [www.fishwatch.gov](http://www.fishwatch.gov)



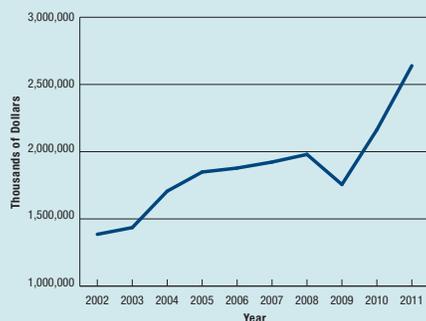
**Species Profile**  
 Read about red snapper management in the Gulf of Mexico: [http://sero.nmfs.noaa.gov/sustainable\\_fisheries/gulf\\_fisheries/red\\_snapper/index.html](http://sero.nmfs.noaa.gov/sustainable_fisheries/gulf_fisheries/red_snapper/index.html)

**Economic Impacts**  
 Read *Fishery Economics of the U.S.—2011*: [www.st.nmfs.noaa.gov/economics/publications/feus/fisheries\\_economics\\_2011](http://www.st.nmfs.noaa.gov/economics/publications/feus/fisheries_economics_2011)

*Fishermen hauling in Alaska king crab pots. In 2011 the seafood industry generated \$129 billion in sales impacts, \$37 billion in income impacts, and supported 1.2 million jobs.*

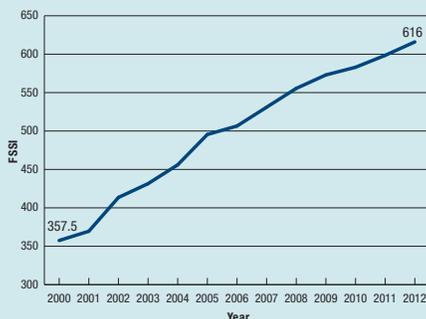
## Increasing Revenue

The recently released *Fisheries Economics of the U.S.* shows the (unadjusted) revenue for key federally managed species, including Pacific halibut, Pacific salmon, sablefish, sea scallops, shrimp, tuna, and walleye pollock.



## Tracking Performance

The FSSI measures the performance of 230 stocks, representing over 90 percent of total U.S. landings. The FSSI has a maximum score of 920 and increases when we determine the status of a stock and when a stock's status improves (either no longer subject to overfishing, no longer overfished, or has rebuilt).



## Achieving Sustainable Fisheries

The 2012 report documents significant additional progress toward long-term biological and economic sustainability of our nation's fisheries by ending overfishing and rebuilding stock abundance. The economic benefits of sustainable fisheries are clear. The most recent economic report on U.S. fisheries found that in 2011, U.S. commercial fishermen landed 9.9 billion pounds of seafood valued at \$5.3 billion, an increase of 1.6 billion pounds (20 percent) and \$829 million (18 percent) over 2010 figures. The overall seafood industry—harvesters, seafood processors and dealers, seafood wholesalers, and seafood retailers—generated \$129 billion in sales impacts and \$37 billion in income impacts, and supported 1.2 million jobs in 2011. In addition, recreational fishing generated \$70 billion in sales impacts and \$20 billion in income impacts, and supported 455,000 jobs. Jobs supported by commercial businesses held steady from the previous year, while jobs generated by the recreational fishing industry represented a 40 percent increase over 2010. The Fish Stock Sustainability Index (FSSI), which we use to measure progress in stock assessment and sustainable fishery management, has increased steadily since 2000. In the coming years, we expect to see continued improvement.

We acknowledge the substantial contribution of our partners to these positive results. Fishermen, fishing communities, and the Councils have needed to make difficult decisions, and many areas have absorbed the cost of conservation and investment to achieve long-term economic and biological sustainability. We look forward to working with Congress, the Councils, our state partners, and other stakeholders to build on these results and carry out our stewardship responsibility to sustainably manage the nation's marine fishery resources.



*Coho salmon (Washington Coast: Strait of Juan de Fuca) was one of six stocks rebuilt in 2012.*

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