



# NOAA FISHERIES

## Science and Technology

**Stock assessments provide the scientific basis for fisheries management. At the end of FY2013 Quarter 4, 134 FSSI stocks (58.3%) have adequate assessments.**

### What is a stock assessment?

A stock assessment is the process of collecting, analyzing, and reporting information about fish stocks to determine changes in the stocks due to fishing and, to the extent possible, predict future trends in abundance and catch. NOAA Fisheries' scientists work with other scientists, fishermen, resource managers and others from around the country and world to ensure NOAA stock assessments represent the best science information available.

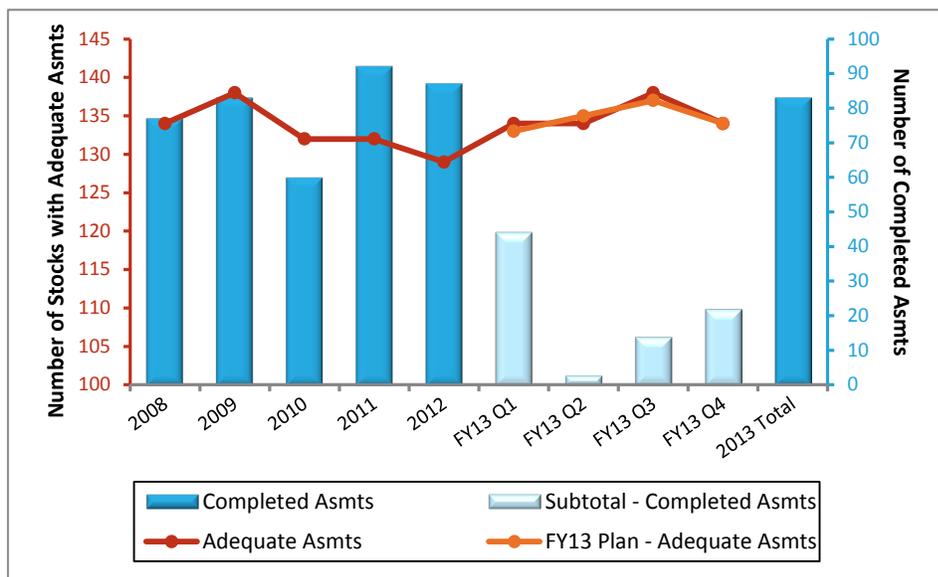
# Fish Assessment Report

## Fiscal Year 2013 Quarter 4 Update

### Assessment Overview

Stock assessments provide important science information necessary for the conservation and management of fish stocks. NOAA Fisheries' stock assessments are used as the scientific basis for determining the status of Federally-managed fish stocks and to guide the setting of annual catch limits that will prevent overfishing and attain optimum yield from our Nation's fisheries. This report summarizes NOAA Fisheries' stock assessment efforts for stocks listed on the Fish Stock Sustainability Index (FSSI). The FSSI represents 230 of the country's top fishery stocks, selected for inclusion based on their importance to commercial and recreational fisheries. Counts of FSSI stocks with adequate assessments are updated on a quarterly and annual basis to track performance of the national stock assessment program.

Fiscal Year (FY) 2013 began in October 2012 with 56.1% of FSSI stocks (129/230) with adequate assessments. By the end of FY2013, a combination of updated and improved assessments brought this number up to 58.3% of FSSI stocks (134/230) with adequate assessments. Over 80 stock assessments of FSSI stocks were completed in FY2013 to support fisheries management (including annual catch limits) and status determinations. Additional assessments were also conducted to improve the scientific basis of management for selected non-FSSI stocks. For a summary of changes (both positive and negative) to the list of FSSI stocks with adequate assessments in FY2013, please see Table 1. Assessment activity for all FSSI stocks in FY2013 is listed in Appendix A, Appendix B lists the current assessment status for all FSSI stocks, and Appendix C lists preliminary planned assessments for FSSI stocks in FY2014.



Recent assessment activity for FSSI stocks through the end of FY2013, Quarter 4.

## Why assess stocks?

NOAA Fisheries' stock assessments are key to marine resource management. They provide high-quality science information to managers to answer importance questions such as:

- What is the current status of a stock relative to established targets?
- How much catch is sustainable while maintaining a healthy stock?
- If a stock becomes depleted, what steps are necessary to rebuild it to healthy abundance levels?

Answers to these questions help managers make the best decisions to ensure sustainable fisheries, healthy ecosystems, and productive coastal communities.

## Adequate assessments

Fish stock assessments provide the technical basis for determining stock status and forecasting the level of acceptable biological catch (ABC) that will prevent overfishing. The amount of data available to conduct stock assessments varies tremendously across the ~500 Federally-managed stocks and even within the 230 FSSI stocks.

Although any assessment effort provides important information to resource managers, assessments must meet minimum standards of data availability and modeling complexity to be considered adequate. Generally, a minimally adequate assessment can be conducted where there is good information on the level of annual catch and an indicator of the degree of change in stock abundance over time (for more information, see the *Marine Fisheries Stock Assessment Improvement Plan*, <http://www.st.nmfs.noaa.gov/stock-assessment/improvement-plan/index>).

Assessments also need to be updated periodically to track natural fluctuations and ensure timely management advice. For the purposes of this report, five years is used as a nominal window beyond which the adequacy of an assessment is considered to have expired. In reality, many important stocks are updated more frequently.

Lastly, all assessments are expected to be validated by a regional review system before being considered as the best scientific information available regarding the status of the stock.

### Quarter 1 (October–December, 2012)

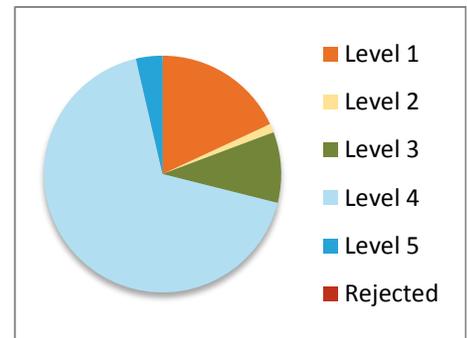
At the end of Quarter 1, 134 FSSI stocks had assessments considered adequate. A total of 44 assessments were completed in Quarter 1 for FSSI stocks (Appendix A), complemented by an additional 24 assessments of non-FSSI stocks. A majority (89%) of these assessments were completed at an adequate level. Many Quarter 1 assessments were annual updates for stocks in the Alaska Region. Two Alaska crab stocks were assessed using new and improved assessment models, resulting in an improvement of their assessment status. Additional assessments were completed for Atlantic and Pacific Coast stocks, as well as two Atlantic Highly Migratory Species in cooperation with the International Commission for the Conservation of Atlantic Tunas (ICCAT). Several of the assessments completed in Quarter 1 contributed to an increase in the total number of stocks with adequate assessments (Table 1).

### Quarter 2 (January–March, 2013)

Three stock assessments were completed in the second quarter of FY2013 (Appendix A), and there was no change in the number of stocks with adequate assessments (134). Several stock assessments were delayed from completion in Quarter 2 due to requests for additional analyses and review in support of management needs. Although few assessments were completed in Quarter 2, the early spring is a busy time for stock assessment scientists as they work on stock assessments scheduled for completion later in the year and collaborate with survey scientists to prepare for a busy field season.

### Quarter 3 (April–June, 2013)

Fourteen stock assessments were completed in the third quarter of FY2013 (Appendix A), leading to an increase in the number of stocks with adequate assessments to 138 (60.0%). Several assessments scheduled for completion in Quarter 3 were delayed due to requests from the scientific review panel for additional analyses. Assessments completed this quarter



Level of assessments completed (83 total) for FSSI stocks at the end of FY2013 Quarter 4. A total of 81% of the stock assessments completed for FSSI stocks in FY2013 were at an adequate level (i.e. Level 3 or greater). Assessment levels are defined as: 1=index only (commercial or research CPUE); 2=simple life history equilibrium models; 3=aggregated production models; 4=size/age/stage-structured models; and 5=models incorporating ecosystem considerations and spatial and seasonal analyses. For more information, see the *Marine Fisheries Stock Assessment Improvement Plan*, <http://www.st.nmfs.noaa.gov/stock-assessment/improvement-plan/index>.

included a new assessment for rex sole (not previously assessed), an assessment of white hake in the North Atlantic that provided the information necessary to reclassify the stock's status, and new assessments for three non-FSSI stocks to support improved catch limits and other important management measures.

### Quarter 4 (July–September, 2013)

A total of 22 assessments were completed in Q4 of FY2013, making a total of 83 assessments of FSSI stocks in FY2013. An additional 62 assessments of non-FSSI stocks were conducted to support resource management needs. Noteworthy assessment accomplishments in Q4 include new benchmark assessments for two Pacific Coast groundfish stocks (Pacific sanddab and rougheye rockfish) that had never previously been assessed. A total of nine assessments reached the 5-year expiration mark at the end of Q4, although two of these stocks have assessments in progress scheduled for completion in early FY2014, and several more are planned for later in 2014. The loss of adequacy for these stocks was offset in FY2013 by a combination of new, improved, and updated assessments to end the year with 134 stocks (58.3%) with adequate assessments.

Table 1: Assessments expected to impact the number of FSSI stocks with adequate assessments in FY2013

Quarter	Fishery Council	Fishery Management Plan	Stock Name and Area	Adequate?		Change	Notes on Assessment
				Previous	Current		
1	HMS	Consolidated Atlantic Highly Migratory Species	White marlin - Atlantic	No	Yes	+1	ICCAT assessment
1	NPFMC	Bering Sea/Aleutian Islands King and Tanner Crabs	Blue king crab - Saint Matthew Island	No	Yes	+1	New assessment model
1	NPFMC	Bering Sea/Aleutian Islands King and Tanner Crabs	Southern Tanner crab - Bering Sea	No	Yes	+1	New assessment model
1	SAFMC	Snapper-Grouper Fishery of the South Atlantic Region	Red porgy - Southern Atlantic Coast	No	Yes	+1	Replaces assessment that sunset in FY2011
1	SAFMC/GMFMC	Snapper-Grouper Fishery of the South Atlantic Region/Reef Fish Resources of the Gulf of Mexico	Yellowtail snapper - Southern Atlantic Coast / Gulf of Mexico	No	Yes	+1	Assessment completed in FY2012 by State of Florida
1	WPFMC	Pacific Pelagic Fisheries of the Western Pacific Region Ecosystem	Striped marlin - Central Western Pacific	Yes	Yes	0	International assessment replaces sunset assessment
<b>Quarter 1 Projected Number of Stocks with Adequate Assessments = 133; Actual = 134</b>							
<b>Quarter 2 Projected Number of Stocks with Adequate Assessments = 135; Actual = 134</b>							
3	NEFMC	Northeast Multispecies	White hake - Gulf of Maine / Georges Bank	Yes	Yes	0	Replaces sunset assessment
3	PFMC	Pacific Coast Groundfish	English sole - Pacific Coast	No	Yes	+1	Data-moderate assessment replaces sunset assessment
3	PFMC	Pacific Coast Groundfish	Rex sole - Pacific Coast	No	Yes	+1	New assessment using data moderate methods
3	PFMC	Pacific Coast Groundfish	Yellowtail rockfish - Northern Pacific Coast	No	Yes	+1	Data-moderate assessment replaces sunset assessment
3	SAFMC/GMFMC	Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic	Cobia - Gulf of Mexico	No	Yes	+1	Stock last assessed in 2001
<b>Quarter 3 Projected Number of Stocks with Adequate Assessments = 137; Actual = 138</b>							
4	GMFMC	Stone Crab Fishery of the Gulf of Mexico	Stone crabs (Menippe spp.) - Gulf of Mexico	Yes	No	-1	Sunset - stock was removed from Federal FMP
4	HMS	Consolidated Atlantic Highly Migratory Species	Atlantic sharpnose shark - Atlantic	Yes	No	-1	Sunset - update expected FY14 Q1
4	HMS	Consolidated Atlantic Highly Migratory Species	Atlantic Small Coastal Shark Complex	Yes	No	-1	Sunset - complex members now assessed individually
4	HMS	Consolidated Atlantic Highly Migratory Species	Bonnethead - Atlantic	Yes	No	-1	Sunset - update expected FY14 Q1
4	HMS	Consolidated Atlantic Highly Migratory Species	Finetooth shark - Atlantic	Yes	No	-1	Sunset - update expected late 2014
4	PFMC	Pacific Coast Groundfish	Blue rockfish - California	Yes	No	-1	Sunset - planned update 2015
4	PFMC	Pacific Coast Groundfish	Brown rockfish - Pacific Coast	No	No	0	New assessment delayed to FY14
4	PFMC	Pacific Coast Groundfish	Longspine thornyhead - Pacific Coast	No	Yes	+1	Replaces FY10 sunset assessment
4	PFMC	Pacific Coast Groundfish	Pacific sanddab - Pacific Coast	No	Yes	+1	New assessment
4	PFMC	Pacific Coast Groundfish	Rougheye rockfish - Pacific Coast	No	Yes	+1	New assessment
4	PFMC	Pacific Coast Groundfish	Shortspine thornyhead - Pacific Coast	No	Yes	+1	Replaces FY10 sunset assessment

Table 1, continued

Quarter	Fishery Council	Fishery Management Plan	Stock Name and Area	Adequate?		Change	Notes on Assessment
				Previous	Current		
4	PFMC	Pacific Coast Groundfish	Vermilion rockfish - California	No	No	0	Assessment explored but not completed due to time limits
4	SAFMC	Snapper-Grouper Fishery of the South Atlantic	Greater amberjack - Southern Atlantic Coast	Yes	No	-1	Sunset of previous assessment
4	SAFMC/ GMFMC	Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic	King mackerel - Gulf of Mexico	Yes	No	-1	Sunset - planned update 2014
4	SAFMC/ GMFMC	Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic	King mackerel - Southern Atlantic Coast	Yes	No	-1	Sunset - planned update 2014
4	SAFMC/ GMFMC	Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic	Spanish mackerel - Gulf of Mexico	No	Yes	+1	SEDAR 28 Benchmark

**Quarter 4 Projected Number of Stocks with Adequate Assessments = 134; Actual = 134**

### Highlight: Science Program Reviews

In early 2013, NOAA Fisheries initiated a standardized five-year peer review cycle to give each of its six regional Science Centers, as well as the headquarters Office of Science and Technology, an opportunity to critically review their science programs. Systematic reviews of science programs are important to improve integration, identify best practices, ensure NOAA Fisheries is able to provide the best available science, and ultimately, earn the public's trust in our science and management. Each year in the five-year cycle will focus on a different theme, with the 2013 theme being data collection and management programs that support fish stock assessments. During each review, national and international experts from within and outside federal government are invited to participate. The review process gives Centers a chance to showcase progress and new innovations, while also receiving guidance to help them continue to improve data collection and management systems – with the end goals of improving transparency and providing the best information possible to support stock assessments and fishery management needs. Reviews are open to the public, offering the chance for public, fishing industry, and other stakeholder input into the process.

The last data collection review was completed in September, and reports synthesizing information from each of the Center reviews will be published as soon as they are available, followed up by a national synthesis. For more information on NOAA Fisheries' program reviews or to view review reports, please visit <http://www.st.nmfs.noaa.gov/science-program-review/>.

In 2014, NOAA Fisheries will follow up with the data collection reviews by examining its stock assessment science programs. Stock assessment method reviews will include evaluation of important current topics such as reducing uncertainty in stock assessments, use of stock assessments to develop management advice, and consideration of environmental factors within the stock assessment process. Participants will also consider the adequacy of regional assessment peer review processes, and communication of assessment results. Reviews will follow the same format, inviting experts to evaluate the quality, relevance, and performance of science and research programs, facilitate improvements where needed, and provide opportunities for public and stakeholder engagement.

For more information contact:

Kristan Blackhart, [kristan.blackhart@noaa.gov](mailto:kristan.blackhart@noaa.gov)

For more detailed information on fish stock assessments, please visit:

<http://www.st.nmfs.noaa.gov/stock-assessment/index>

<https://www.st.nmfs.noaa.gov/sisPortal/>

