

NOAA FISHERIES

Science and Technology

Stock assessments provide the scientific basis for fisheries management. At the end of FY2014, 137 FSSI stocks (59.6%) 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.

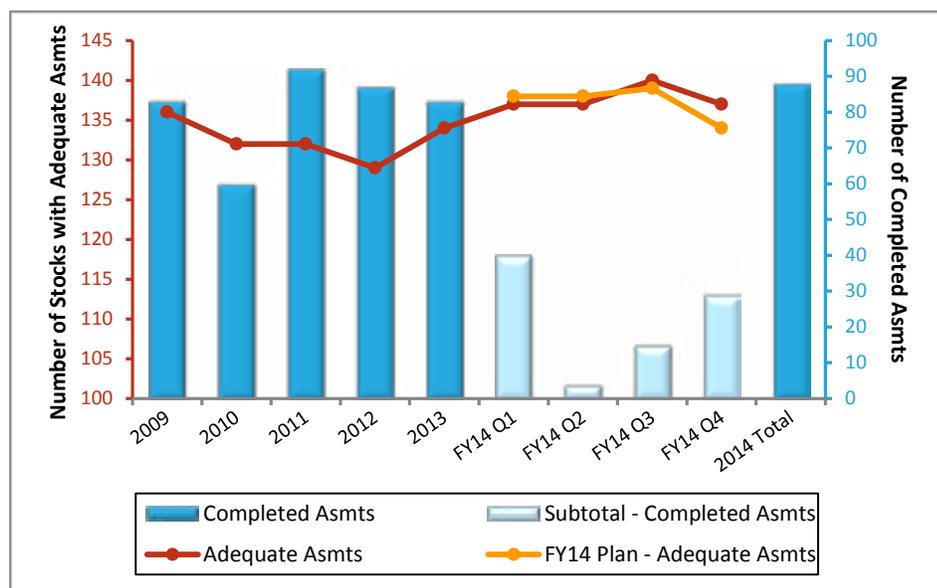
Fish Assessment Report

Fiscal Year 2014 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) 2014 began in October 2013 with 58.3% of FSSI stocks (134/230) with adequate assessments. This number was anticipated to remain level in FY2014, with several new or improved stock assessments throughout the year offsetting losses due to expiring assessment adequacy at year's end. However, the final number for FY2014 is 59.6%, exceeding the annual target by three stocks with adequate assessments. A total of 88 assessments of FSSI stocks were completed in FY2014 to support fisheries management (including annual catch limits) and status determinations. Of these, 75% were at an adequate level (see side bar on page 2), and three were advanced stock assessments that included ecosystem information. An additional 102 assessments were completed to improve the scientific basis of management for non-FSSI stocks. A total



Recent assessment activity for FSSI stocks through the end of FY2014, 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 limits?
- 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](#)).

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.

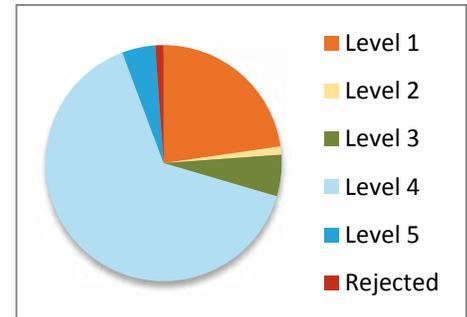
of three stocks were assessed for the first time in FY2014, while assessments confirmed the end of overfishing and/or rebuilt populations for 18 stocks this year. For a summary of changes (both positive and negative) to the list of FSSI stocks with adequate assessments in FY2014, please see Table 1. Assessment activity for FSSI stocks in FY2014 is listed in Appendix A, Appendix B lists the current assessment status for all FSSI stocks, and Appendix C lists assessments completed in FY2014 for non-FSSI stocks.

Quarter 1 (October–December, 2013)

At the end of Quarter 1, 137 FSSI stocks had assessments considered adequate. 41 assessments were completed in Quarter 1 for FSSI stocks (Appendix A), along with 28 additional assessments of non-FSSI stocks and stock complexes. A majority (90%) of these assessments were completed at an adequate level (i.e. Assessment Level 3 or above). Many (32/41) of the assessments completed in Quarter 1 are annual assessment updates for Alaska stocks. Other notable assessments completed in Quarter 1 include an assessment of brown rockfish on the West Coast, the first ever assessment for that stock. Several first quarter assessments contributed to an increase in the total number of stocks with adequate assessments from 134 to 137 (Table 1). This is one short of the Quarter 1 target, due to delays resulting from the government shutdown in October 2013.

Quarter 2 (January–March, 2014)

The number of FSSI stocks with adequate assessments remains unchanged at 137 at the end of Quarter 2. Only three assessments of FSSI stocks were completed during the second quarter, along with 64 assessments of Pacific Coast salmon stocks. Although there are typically few assessments completed during the early months of the calendar year, these months are a busy time for assessment scientists as they work towards completion of assessments for review in the spring and summer months, and work with survey scientists to prepare for the upcoming field season.



Level of assessments completed (88 total in FY2014) for FSSI stocks. 75% of the stock assessments completed in FY2014 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 details, see the [Marine Fisheries Stock Assessment Improvement Plan](#).

Quarter 3 (April–June, 2014)

Quarter 3 ended with a total of 140 FSSI stocks with adequate assessments, just above the projection of 139 stocks. The assessments of three stocks managed under the South Atlantic Snapper-Grouper FMP (gag, snowy grouper, and wreckfish) were finalized during the third quarter, allowing these three stocks to regain adequate status and providing much needed updated management information on status and allowable catch levels. The assessment of snowy grouper, initially planned for completion at the beginning of the fiscal year but delayed due to the government shutdown in October, is now complete and available to support management measures.

Quarter 4 (July–September, 2014)

At the end of FY2014, 137 FSSI stocks have adequate assessments. This exceeds the annual target of 134 by three stocks. Several stocks lose adequate assessment status in Quarter 4 due to sunseting (assessments older than 5 years are no longer considered to be adequate), while the two Southeast king mackerel stocks regain adequate status with new assessments completed in Q4 (Table 1). Other notable assessments completed in the fourth quarter include annual updates of Northeast skates and South Atlantic shrimps; transboundary assessments in

Table 1: Assessments affecting the number of FSSI stocks with adequate assessments in FY2014

| Quarter | Fishery Council | Fishery Management Plan | Stock Name and Area | Adequate? | | Change | Notes on Assessment |
|---|-----------------|--|--|-----------|---------|--------|--|
| | | | | Previous | Current | | |
| 1 | HMS | Consolidated Atlantic Highly Migratory Species | Albacore - North Atlantic | Yes | Yes | 0 | ICCAT assessment maintains adequacy |
| 1 | HMS | Consolidated Atlantic Highly Migratory Species | Atlantic sharpnose shark - Atlantic | No | Yes | +1 | Previous assessment expired FY2013 |
| 1 | HMS | Consolidated Atlantic Highly Migratory Species | Swordfish - North Atlantic | Yes | Yes | 0 | ICCAT assessment maintains adequacy |
| 1 | NPFMC | Groundfish of the Gulf of Alaska | Gulf of Alaska Demersal Shelf Rockfish Complex | No | Yes | +1 | Review of existing model elevates to adequate |
| 1 | PFMC | Pacific Coast Groundfish | Brown rockfish - Pacific Coast | No | Yes | +1 | New assessment |
| Quarter 1 Projected Number of Stocks with Adequate Assessments = 138; Actual = 137^a | | | | | | | |
| 2 | MAFMC | Tilefish | Tilefish - Mid-Atlantic Coast | Yes | Yes | 0 | Assessment maintains adequacy |
| Quarter 2 Projected Number of Stocks with Adequate Assessments = 138; Actual = 137^a | | | | | | | |
| 3 | SAFMC | Snapper-Grouper Fishery of the South Atlantic Region | Gag - Southern Atlantic Coast | No | Yes | +1 | Last assessed 2006 |
| 3 | SAFMC | Snapper-Grouper Fishery of the South Atlantic Region | Snowy grouper - Southern Atlantic Coast | No | Yes | +1 | Delayed due to government shutdown last October |
| 3 | SAFMC | Snapper-Grouper Fishery of the South Atlantic Region | Wreckfish - Southern Atlantic Coast | No | Yes | +1 | Assessment completed external to SEFSC/SEDAR |
| Quarter 3 Projected Number of Stocks with Adequate Assessments = 139; Actual = 140^a | | | | | | | |
| 4 | GMFMC | Reef Fish Resources of the Gulf of Mexico | Red grouper - Gulf of Mexico | Yes | No | -1 | Previous assessment sunsets; benchmark planned for 2015 |
| 4 | HMS | Consolidated Atlantic Highly Migratory Species | Blue shark - Atlantic | Yes | No | -1 | Previous assessment sunsets |
| 4 | NEFMC | Northeast Multispecies | Yellowtail flounder - Georges Bank | Yes | No | -1 | Previous assessment approach rejected, new methods not adequate |
| 4 | PFMC | Pacific Coast Groundfish | Cabazon - Pacific Coast | Yes | No | -1 | Previous assessment sunsets |
| 4 | PFMC | Pacific Coast Groundfish | Lingcod - Pacific Coast | Yes | No | -1 | Previous assessment sunsets |
| 4 | PFMC | Pacific Coast Groundfish | Splitnose rockfish - Pacific Coast | Yes | No | -1 | Previous assessment sunsets |
| 4 | SAFMC/GMFMC | Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic | King mackerel - Gulf of Mexico | No | Yes | +1 | Last assessed 2008 |
| 4 | SAFMC/GMFMC | Coastal Migratory Pelagic Resources of the Gulf of Mexico and South Atlantic | King mackerel - Southern Atlantic Coast | No | Yes | +1 | Last assessed 2008 |
| 4 | SAFMC/GMFMC | Snapper-Grouper Fishery of the South Atlantic Region/Reef Fish Resources of the Gulf of Mexico | Goliath grouper - Southern Atlantic Coast / Gulf of Mexico | No | Yes | +1 | Revised info on last assessment indicates it should be counted as adequate |

^aThe number of adequate assessments was impacted in Quarters 1 and 2 by the government shutdown, which delayed completion of an assessment for South Atlantic snowy grouper until Q3. Additionally, the assessment of Atlantic bonnethead shark was expected to be adequate in Quarter 1, but rejected due to reviewer concerns over stock boundaries; this was offset by the unanticipated addition of the Gulf of Alaska Demersal Shelf Rockfish Complex to the list of stocks with adequate assessments, and an unscheduled assessment of wreckfish.

Highlight: Implementing FSSI 2.0

The Fish Stock Sustainability Index (FSSI) is a quarterly index that tracks performance of our nation's fisheries. The FSSI, implemented in 2005, is based on 230 stocks selected because of their importance to commercial and recreational U.S. fisheries. The FSSI increases when NOAA Fisheries determines the status of a stock, or when a stock's status improves. Stock assessments contribute to increases in the FSSI by providing the information necessary to determine status or confirm improvements in status.

Beginning in FY2015, revisions to the original FSSI will be made and a "Fish Stock Sustainability Index 2.0" will be implemented. The new FSSI 2.0 also includes Federally-managed stocks most important to U.S. commercial and recreational fisheries. A total of 199 stocks will be included initially, including many of the same stocks from the previous FSSI. Some new stocks with improved data collection and recent first time assessments will also be added. Stocks under international management (and exempt from annual catch limits) are excluded from the FSSI 2.0 to better reflect the ability of NOAA and the regional Fishery Management Councils to manage domestic stocks. A separate index, still under development, is intended to track the performance of stocks under international management. Although the previous FSSI stock list was intended to be static over time, the stock list for FSSI 2.0 will allow for flexibility. This provides consistency of the index over time, while still allowing for changes over time to stock and management structure. Stocks on the FSSI will continue to be included as long as they continue to meet the criteria for the index (e.g. important to fisheries). New stocks will be considered for inclusion as new biological information becomes available or important new fisheries develop.

Currently, fish assessment performance is linked to the same list of 230 stocks included in the FSSI. When the FSSI 2.0 is implemented in FY2015, the list of stocks used to measure performance for fish assessments will be revised to match those 199 stocks included in the new FSSI. Calculation of fish assessment performance will remain the same and be applied to the new list of stocks.

cooperation with Canada for Atlantic cod, haddock, and yellowtail flounder on Georges Bank; and several international assessments of highly migratory species completed in cooperation with Regional Fishery Management Organizations in the Pacific Ocean.

What's Next?

As detailed in the Feature Box above, the list of stocks used to track fish assessment performance will be changing at the beginning of FY2015. A complete list of assessments planned in FY2015 for the 199 stocks included in the FSSI 2.0 can be found in Appendix D. A total of 94 assessments of FSSI stocks are currently planned for FY2015, based on best available information provided

by regional Science Center staff. An additional 120 assessments of non-FSSI stocks, complex members, and international stocks are planned for FY2015. Quarter 1 is usually a busy time for stock assessments, and FY2015 will be no exception — 44 stock assessments are expected to be completed for FSSI stocks during the first quarter, including annual updates for shrimp stocks in the Gulf of Mexico and all assessed groundfish stocks in Alaska. Fewer assessments are typically completed during the second quarter, as assessment scientists work on analyses for assessments planned to be completed later in the year and prepare for busy field survey seasons. Annual assessment updates for Pacific Coast salmon stocks are planned for Quarter 2, including

assessments of Sacramento and Klamath fall Chinook stocks, two new additions to the FSSI. During Quarter 3, assessment teams are busy in the field collecting survey data to support future stock assessments. Fourteen assessments are anticipated for FSSI stocks in Quarter 3, including updated assessments for several Pacific Coast groundfish and South Atlantic snapper-grouper stocks. Many additional assessments will be in the final stages of preparation for review during Quarter 4. Field surveys continue during the fourth quarter, along with finalization of 33 planned assessments of FSSI stocks. These include additional Pacific Coast groundfish stocks and numerous indicator analyses for Northeast stocks.

For more information contact::

Kristan Blackhart, 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/>

