Fish Assessment Report

Fiscal Year 2014 Quarter 1 Update

NOAA FISHERIES
Science and Technology

Stock assessments provide the scientific basis for fisheries management. At the end of FY2014 Quarter 1, 137 FSSI stocks (59.6%) have adequate assessments.

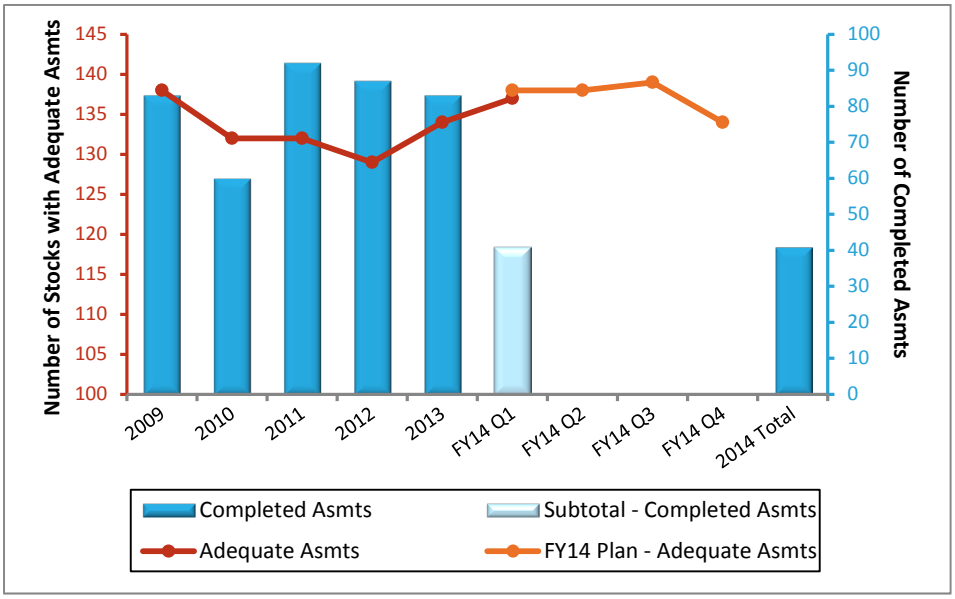
What is a stock assessment?

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.

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 is 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. Around 100 stock assessments of FSSI stocks are planned for FY2014 to support fisheries management (including annual catch limits) and status determinations. Additional assessments will be 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 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 for non-FSSI stocks.



Recent assessment activity for FSSI stocks through the end of FY2014, Quarter 1.

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.

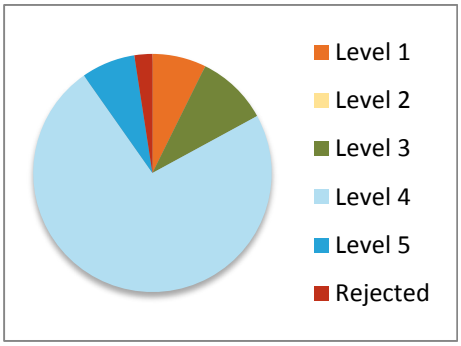
Although any assessment effort provides important information to resource managers, assessments must meet minimum standards of data availability and modeling complexity to be considered adequate. Generally, a minimally adequate assessment can be conducted where there is good information on the level 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*.

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, 2013)

At the end of Quarter 1, 137 FSSI stocks have 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. Assessment improvements for Alaska stocks included splitting the Bering Sea / Aleutian Islands stock of Pacific cod into two separate stocks, enabling refined spatial analyses in the assessments. Additional assessments completed in Quarter 1 included annual updates for Gulf of Mexico shrimp stocks; updated assessments for goosefish and several Atlantic highly migratory species; and completion of an assessment of brown rockfish on the west coast, the first ever assessment for that stock. Several of these assessments contributed to an increase in the total number of stocks with adequate assessments from 134 at the beginning of Quarter 1 to 137 at the end (Table 1). This is one short of the Quarter 1 target, due to delays resulting from the government shutdown in October 2013.



Level of assessments completed (41 as of the end of FY2014, Quarter 1) for FSSI stocks. 90% of the stock assessments completed so far in FY2014 are 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.

Highlight: "Rumble Strip" Approach

Limited resources and a large number of stocks to manage mean that NOAA Fisheries cannot complete stock assessments annually for every stock. To meet these challenges, regional stock assessment scientists continue to work on developing a range of methods that require less time and effort to prepare than a full stock assessment. This allows NOAA to provide timely management advice for a larger number of stocks each year. In the FY2013 Quarter 3 update, we discussed data-moderate assessment methods in use for stocks on the West Coast. This time, we will cover the rumble strip approach developed to evaluate stocks on the northern and Mid-Atlantic coast.

Rumble strips are used on the highway to alert drivers when they have gone off course. The rumble strip approach for assessing stocks works in a similar way – scientists use a range of stock indicators to determine if multi-year catch recommendations are still on track. Good indicators should be from high quality sources, easy to calculate, available on an annual basis and in a timely fashion, and indicate changes in fishing rates, biomass, or other important signs of stock status.

Scientists look at the variability of each indicator time series to set rumble strip boundaries. Each index is then evaluated against the set boundaries to see if new stock data is within expectations. If too many indicators are outside of expected bounds (i.e. stock status is better or worse than expected), further evaluation is required. This gives scientists the opportunity to fully investigate all available data for the stock and, if appropriate, suggest corrective actions to modify catch recommendations (if stock appears to be below expectations) or request a full stock assessment (if stock appears better than expected). A rumble strip analysis was used in 2013 to evaluate the status of scup. Additional details on the approach are available from the Mid-Atlantic Fishery Management Council.

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]							

[a]The number of adequate assessments was impacted in Quarter 1 by the government shutdown, which delayed completion of an assessment for South Atlantic snowy grouper. Additionally, the assessment of Atlantic bonnethead shark was expected to be adequate 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.

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/