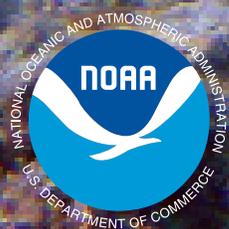


# Fish Assessment Report

FY 2015 Quarter 3 Update

# 3

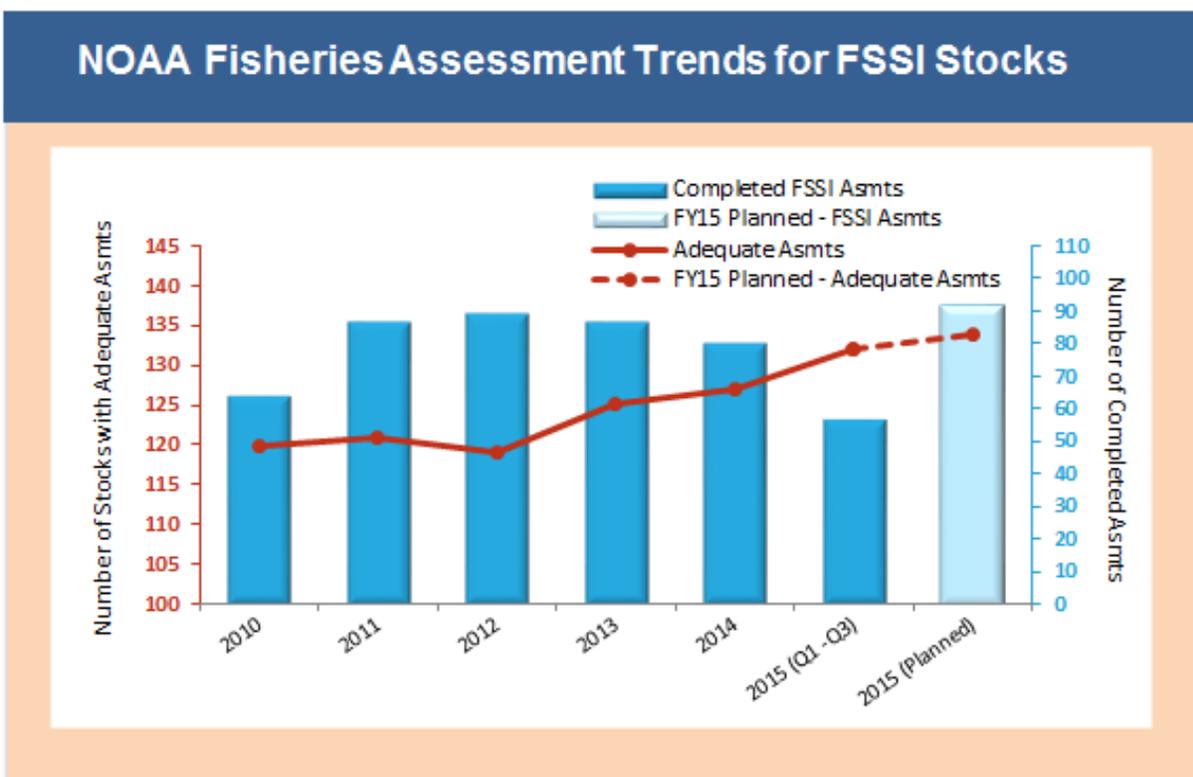


**NOAA**  
**FISHERIES**

Science and  
Technology

# Overview

Stock assessments are key to the sustainable management of our Nation's fisheries and provide the best scientific information available to determine the status of fish stocks. They guide the setting of annual catch limits (ACLs) that prevent overfishing and attain optimum yield from our Nation's fisheries. NOAA Fisheries works with its partners in each management area to conduct right-sized assessments for each fish stock or stock complex, selecting assessment level, type, and frequency based on a variety of factors such as fishery importance, ecosystem importance, stock biology, status of the stock, data availability, and assessment capacity. The *Fish Assessment Report* provides a quarterly update on the status of NOAA Fisheries assessment activities for federally managed fish stocks. According to the latest projections, in FY2015 NOAA Fisheries will assess over 90 of the 199 stocks included in the Fish Stock Sustainability Index (FSSI), an index used to measure the performance of commercially and recreationally important fisheries. With these added assessments, the cumulative number of FSSI stocks that have assessments considered to be adequate based on their timeliness and modeling approach will rise to the highest value ever.



Recent and projected assessment activity for federally managed stocks included in the Fish Stock Sustainability Index (FSSI). The number of FSSI stocks with adequate assessments is used to track performance of the NOAA Fisheries national stock assessment enterprise.

# Assessments this Quarter

**During Quarter 3, 14 stocks were assessed, including 11 FSSI and 3 non-FSSI stocks.**

During Quarter 3, eleven assessments were completed for FSSI stocks and stock complexes, bringing the number of FSSI assessments completed during FY2015 to 57. In addition, 3 assessments were completed for non-FSSI stocks and stock complexes, bringing the number of non-FSSI assessments completed during FY2015 to 95. The total number of FSSI and non-FSSI assessments completed by the end of Quarter 3 is 152 (see Table 1).

Key FSSI benchmark assessments completed this quarter include Pacific coast groundfish stocks (canary rockfish and darkblotched rockfish) and Pacific chub mackerel. Update assessments completed for FSSI stocks include Atlantic herring, South Atlantic and Gulf of Mexico mutton snapper, Pacific sardine, Pacific coast groundfish (sablefish, petrale sole and

arrowtooth flounder), and Aleutian Islands golden king crab. The assessments for Pacific coast canary rockfish and petrale sole continue to show increasing biomass trends, which are now estimated to be above rebuilding target levels.

Key non-FSSI stock assessments completed this quarter include annual updates for Alaska weathervane scallop, Pribilof Islands golden king crab, and Western Aleutian Islands red king crab.

At the end of Quarter 3, the percentage of FSSI stocks with adequate assessments increased to 66.3% (132/199) and is expected to continue to increase during Quarter 4, as several new and improved stock assessments are completed.

**Table 1. FY2015 Completed Assessments**

Science Center(s)	Quarter 1		Quarter 2		Quarter 3		Highlighted Stocks for Quarter 3
	FSSI	Non-FSSI	FSSI	Non-FSSI	FSSI	Non-FSSI	
Northeast	4	0	0	0	1	0	Atlantic herring
Southeast	3	3	1	2	1	0	SA/Gulf mutton snapper
Northwest and Southwest <sup>1</sup>	0	0	2	64	6	0	Pacific coast canary rockfish and petrale sole
Southwest	0	0	0	0	2	0	Pacific sardine and Pacific chub mackerel
Alaska	34	23	1	0	1	3	AI golden king crab
Pacific Islands	0	0	1	0	0	0	None planned for Q3
Southwest and Pacific Islands <sup>2</sup>	0	0	0	0	0	0	None planned for Q3

Footnotes:

<sup>1</sup>The Northwest and Southwest Fisheries Science Centers jointly conduct assessments for Pacific coast groundfish and Pacific coast salmon.

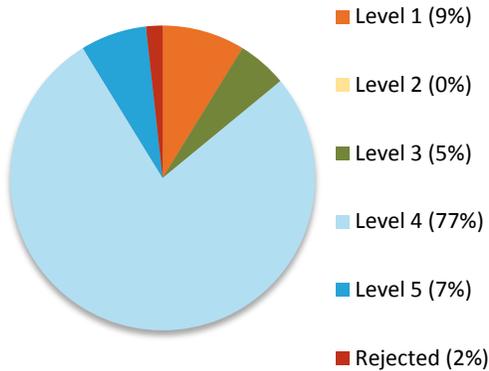
<sup>2</sup>The Southwest and Pacific Islands Fisheries Science Centers jointly conduct assessments for U.S. West Coast Fisheries for Highly Migratory Species and Pacific Pelagic Fisheries of the Western Pacific Region Ecosystem.

# Model Complexity and Assessment Type

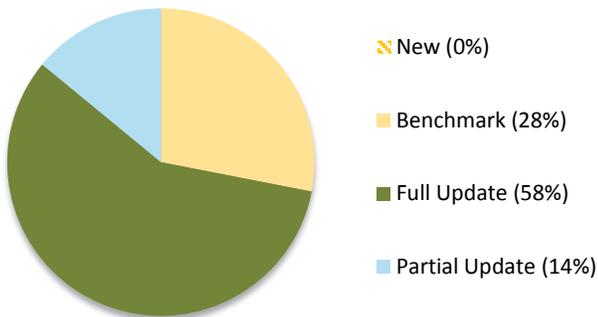
For FSSI stocks, 89% of the assessments conducted during FY2015 are considered adequate (level 3 or higher) and a majority of these assessments were conducted as updates. For non-FSSI stocks, 70% of the assessments conducted during FY2015 are considered adequate. Index-based and simple life history approaches (level 1 and 2) were conducted for 33 stocks (5 FSSI and 28 non-FSSI) providing important science-based advice for the management of data-limited stocks. Ecosystem considerations (level 5) were included in 16 assessments accounting for 11% of all completed assessments during FY2015. Assessment levels and types for all assessments completed through the end of Q3 FY2015 are shown in the charts below:

## FSSI

### Assessment Levels

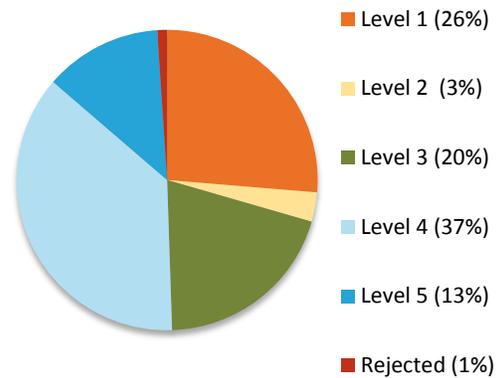


### Assessment Types

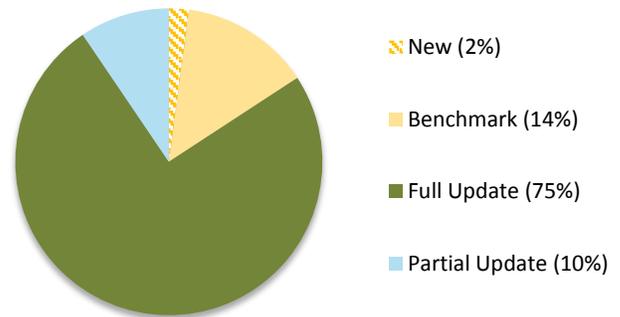


## Non-FSSI

### Assessment Levels



### Assessment Types



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. Assessment types are defined as follows: Benchmarks substantially differ from the previous assessment model structure and may include new data types; Full Updates include most recent year of data and only minor revisions to existing model; and Partial Updates are essentially executive summaries that advance the assessment projections by one year. For details, see the [Marine Fisheries Stock Assessment Improvement Plan](#).

# Regional Highlights: Pacific Islands Research Workshops

The PIFSC Stock Assessment Program recently held Research Workshops on Reef Fish and Bottomfish in the Pacific Island territories of Guam and the Commonwealth of the Northern Mariana Islands.

The purpose of these workshops was to bring together scientists, agency staff, fishing men and women, and others involved with conducting research or managing reef fish and bottomfish in the Pacific Island Territories to: 1) discuss research currently being conducted on insular fish; 2) identify research that can inform and improve the science used to manage these fish; and 3) discuss potential collaborations and future research.

The workshops were well attended and successful in bringing together participants from various sectors to openly communicate about insular fish research. Information gathered during these workshops will help improve collaborations for research on reef fish and bottomfish in the Pacific Islands.

For more information on the PIFSC reef fish and bottomfish research and stock assessments, please visit <http://www.pifsc.noaa.gov/bottomfish/index.php>.

# Incorporating Ecosystem Information into Stock Assessments

Stock assessments have traditionally relied on direct measurements of fish abundance, biology and catch to determine population estimates and catch levels for single stocks. This approach is effective for looking at present and historical conditions, but is limited in accounting for observed variability in stock conditions caused by factors other than fishing. This approach may also be limited when making forecasts of sustainable catch levels, because it does not account for ecosystem factors that may impact future stock abundance.

Integrating environmental and ecosystem factors into stock assessment models can help scientists better understand historical stock changes and improve forecasts. For example, inclusion of a red tide event in the Gulf of Mexico red grouper assessment model has helped to explain sudden declines observed in abundance indices. Inclusion of ecosystem food web studies such as predator consumption rates in the Atlantic herring assessment model has allowed for better estimation of natural mortality. By including these environmental and ecosystem factors in the analysis, scientists have been able to make models that are more realistic and easier to interpret.

While the environmental and ecosystem data needs to be chosen wisely, use of more complete data will improve our understanding of the complex dynamics between physical, biological, and oceanographic variables and improve our ability to account for changing ecosystems.

For more information on innovative approaches to incorporate environmental and ecosystem information in future stock assessments, please visit: <http://www.st.nmfs.noaa.gov/stock-assessment/future-of-stock-assessment>.



Red Grouper swimming in reef habitat.

# Upcoming Assessments & Survey Activity

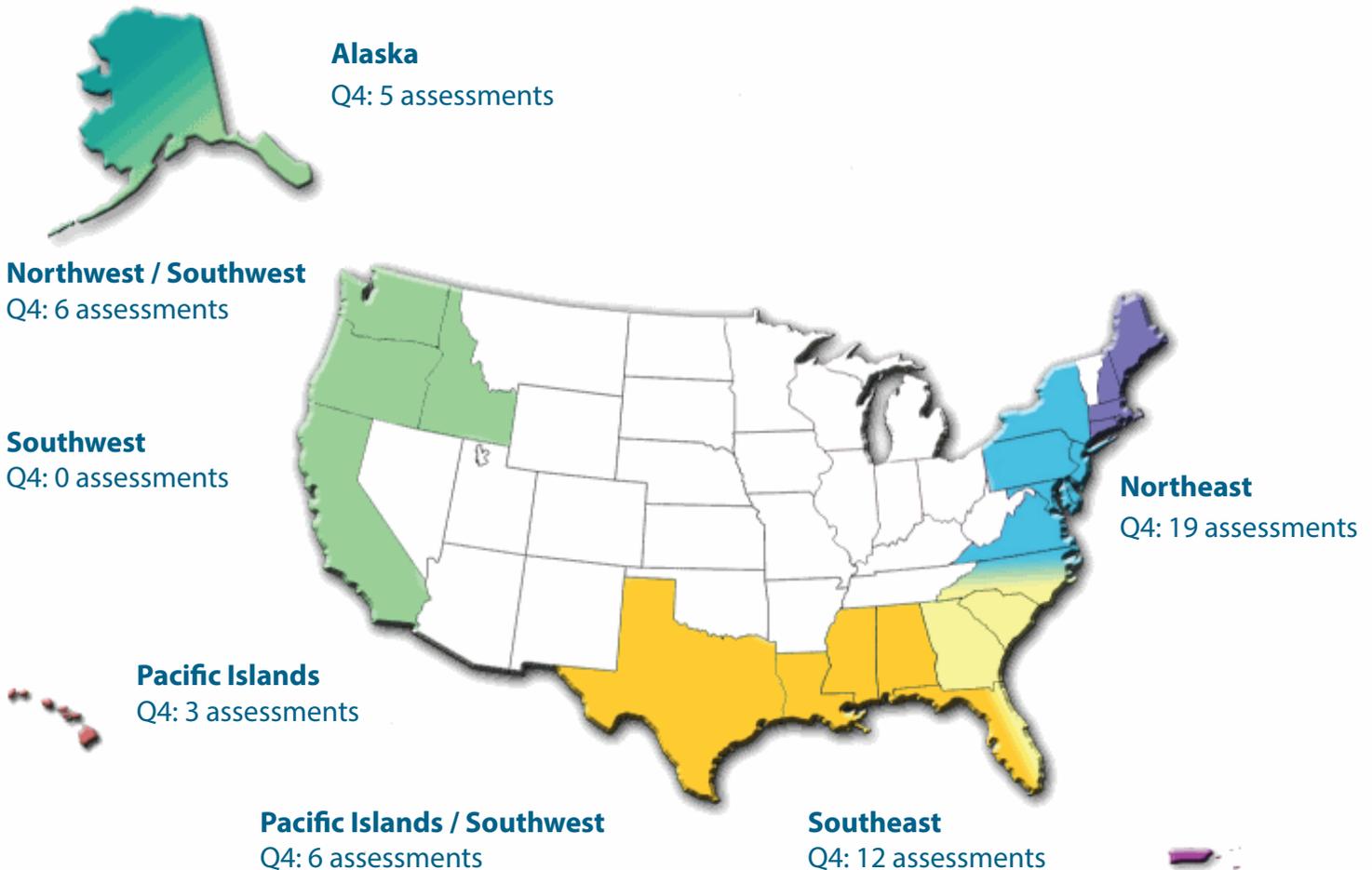
NOAA Fisheries plans to complete 38 assessments for FSSI stocks and 13 assessments for non-FSSI stocks during Q4. Planned assessments for FSSI stocks include Northeast full updates for bluefish, scup, spiny dogfish and summer flounder as well as partial updates for multiple stocks; Pacific Islands updates for Territorial bottomfish complexes; benchmark assessments for Pacific coast groundfish stocks; and annual updates for shrimp stocks in the South Atlantic and Gulf of Mexico. Non-FSSI stock assessments will include Alaskan salmon stocks, Pacific coast China rockfish, and highly migratory stocks including Atlantic big eye tuna and Pacific tuna and shark stocks.

Activity for NOAA Fisheries fishery-independent surveys will increase during Q4 with 22 surveys scheduled to embark on their sampling season. The abundance and biological data collected during this field season

will go through extensive processing and analysis to become important inputs for future stock assessments.

The combined number of planned assessments for both FSSI and non-FSSI stocks is shown below. Detailed information for all completed and planned assessments for FY2015 can be found in the supporting appendices of this report. Appendix A includes assessment activity by quarter for FSSI stocks. Appendix B includes assessment activity by quarter for non-FSSI stocks. The information in these appendices represents the best available at this time and is subject to change.

For more information on assessment activities, including the assessment status for all FSSI stocks, please visit the NOAA Fisheries National Stock Assessment Enterprise website at <http://www.st.nmfs.noaa.gov/stock-assessment/reports>.



# Frequently Asked Questions

## **What is a Stock Assessment?**

A stock assessment is the process of collecting, analyzing, and reporting demographic information to determine changes in the abundance of fishery stocks in response to fishing and, to the extent possible, predict future trends of stock abundance.

## **What Data are Used in Stock Assessments?**

Stock assessments are based on models of fish populations that require three primary categories of data inputs: catch, abundance, and biology. Data inputs must be accurate and timely to ensure the highest quality stock assessments and the best information for resource managers.

## **Why do we Assess Stocks?**

NOAA Fisheries' stock assessments provide high-quality science information needed by managers to support sustainable fisheries as components of resilient ecosystems, communities and economies. Assessments provide the scientific basis for determining if a stock is overfished or experiencing overfishing, to calculate a sustainable harvest rate, and to forecast the catch level that would implement that rate.

## **What is an Adequate Assessment?**

Assessments are considered adequate when they use modeling approaches that are able to address long-term population dynamics of the stock (i.e. assessment level of 3 or above according to the 2001 Marine Fisheries Stock Assessment Improvement Plan), have been updated within five years, and are recommended as best scientific information available through respective peer review processes. The definition of an adequate assessment will change as NOAA Fisheries finalizes and implements the new Stock Assessment Improvement Plan (draft expected in mid-FY16).

## **Why does the Schedule of Planned Assessments Change?**

The schedule of planned assessments is provided by each region at the beginning of the fiscal year and updated in this report as new information becomes available. Changes to the schedule may occur as the feasibility and time needed to conduct assessments are refined, particularly for stocks previously unassessed or assessments using innovative methods, and as assessment needs are updated in coordination with our regional and international partners.

## **Where Can I Find More Information?**

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

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



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**Appendix A. Assessment activity for FSSI stocks and stock complexes by quarter for FY2015. Information on planned assessments is best available and subject to change.**

**Completed Assessments for FSSI Stocks - FY2015 Quarter 1 (October - December, 2014)**

Science Center(s)	Jurisdiction	Stock	Asmt Level <sup>1</sup>	Asmt Type	Adequate	Notes
AFSC	NPFMC	Alaska plaice - Bering Sea / Aleutian Islands	4	Full Update	Yes	
AFSC	NPFMC	Arrowtooth flounder - Gulf of Alaska	4	Partial Update	Yes	
AFSC	NPFMC	Arrowtooth flounder - Bering Sea / Aleutian Islands	5	Benchmark	Yes	
AFSC	NPFMC	Atka mackerel - Bering Sea / Aleutian Islands	4	Full Update	Yes	
AFSC	NPFMC	Bering Sea / Aleutian Islands Blackspotted and Rougheye	4	Benchmark	Yes	
AFSC	NPFMC	Bering Sea / Aleutian Islands Flathead Sole Complex	5	Full Update	Yes	Assessment of indicator stock, flathead sole
AFSC	NPFMC	Bering Sea / Aleutian Islands Rock Sole Complex	4	Full Update	Yes	Assessment of indicator stock, Northern rock sole
AFSC	NPFMC	Bering Sea / Aleutian Islands Skate Complex	4	Full Update	Yes	Assessments of indicator stock, Alaska skate, and complex remainder
AFSC	NPFMC	Blue king crab - Pribilof Islands	1	Full Update	No	
AFSC	NPFMC	Blue king crab - Saint Matthew Island	4	Full Update	Yes	
AFSC	NPFMC	Dusky rockfish - Gulf of Alaska	4	Partial Update	Yes	
AFSC	NPFMC	Flathead sole - Gulf of Alaska	4	Partial Update	Yes	
AFSC	NPFMC	Greenland halibut - Bering Sea / Aleutian Islands	4	Benchmark	Yes	
AFSC	NPFMC	Gulf of Alaska Blackspotted and Rougheye Rockfish Complex	4	Benchmark	Yes	
AFSC	NPFMC	Gulf of Alaska Deepwater Flatfish Complex	4	Partial Updates	Yes	Assessments of indicator stock, Dover sole, and complex remainder
AFSC	NPFMC	Gulf of Alaska Demersal Shelf Rockfish Complex	3	Full Update	Yes	Assessment of indicator stock, yelloweye rockfish

National Marine Fisheries Service - FY2015 Quarter 3  
Appendix A

**Completed Assessments for FSSI Stocks - FY2015 Quarter 1 (Continued)**

Science Center(s)	Jurisdiction	Stock	Asmt Level <sup>1</sup>	Asmt Type	Adequate	Notes
AFSC	NPFMC	Gulf of Alaska Shallow Water Flatfish Complex	4	Full Updates	Yes	Assessments of indicator stocks (rock sole and Northern rock sole) and complex remainder
AFSC	NPFMC	Gulf of Alaska Thornyhead Rockfish Complex	3	Partial Update	Yes	Assessment of indicator stock, shortspine thornyhead
AFSC	NPFMC	Northern rockfish - Bering Sea / Aleutian Islands	4	Benchmark	Yes	
AFSC	NPFMC	Northern rockfish - Western / Central Gulf of Alaska	4	Partial Update	Yes	
AFSC	NPFMC	Pacific cod - Bering Sea	4	Full Update	Yes	
AFSC	NPFMC	Pacific cod - Gulf of Alaska	4	Benchmark	Yes	
AFSC	NPFMC	Pacific ocean perch - Bering Sea / Aleutian Islands	4	Benchmark	Yes	
AFSC	NPFMC	Pacific ocean perch - Gulf of Alaska	4	Full Update	Yes	
AFSC	NPFMC	Red king crab - Bristol Bay	4	Full Update	Yes	
AFSC	NPFMC	Red king crab - Pribilof Islands	1	Full Update	No	
AFSC	NPFMC	Rex sole - Gulf of Alaska	4	Partial Update	Yes	
AFSC	NPFMC	Sablefish - Eastern Bering Sea / Aleutian Islands / Gulf of Alaska	4	Full Update	Yes	
AFSC	NPFMC	Snow crab - Bering Sea	4	Full Update	Yes	
AFSC	NPFMC	Southern Tanner crab - Bering Sea	4	Full Update	Yes	
AFSC	NPFMC	Walleye pollock - Aleutian Islands	4	Benchmark	Yes	
AFSC	NPFMC	Walleye pollock - Eastern Bering Sea	4	Full Update	Yes	
AFSC	NPFMC	Walleye pollock - Western / Central Gulf of Alaska	4	Benchmark	Yes	
AFSC	NPFMC	Yellowfin sole - Bering Sea / Aleutian Islands	5	Full Update	Yes	
NEFSC	NEFMC	Atlantic cod - Gulf of Maine	4	Full Update	Yes	
NEFSC	NEFMC	Pollock - Gulf of Maine / Georges Bank	4	Full Update	Yes	
NEFSC	NEFMC	Winter flounder - Georges Bank	4	Full Update	Yes	
NEFSC	NEFMC	Winter flounder - Gulf of Maine	1	Full Update	No	
SEFSC	CFMC	Caribbean Groupers	1	Benchmark	No	Assessment of complex member species red hind

## National Marine Fisheries Service - FY2015 Quarter 3

## Appendix A

**Completed Assessments for FSSI Stocks - FY2015 Quarter 1 (Continued)**

Science Center(s)	Jurisdiction	Stock	Asmt Level <sup>1</sup>	Asmt Type	Adequate	Notes
SEFSC	GMFMC	Hogfish - Eastern Gulf of Mexico	4	Benchmark	Yes	Led by State of Florida
SEFSC	SAFMC	Hogfish - Southeast Florida	4	Benchmark	Yes	Led by State of Florida; delayed from FY14

**Completed Assessments for FSSI Stocks - FY2015 Quarter 2 (January - March, 2015)**

Science Center(s)	Jurisdiction	Stock	Asmt Level <sup>1</sup>	Asmt Type	Adequate	Notes
AFSC	NPFMC	Red king crab - Norton Sound	4	Full Update	Yes	
NWFSC/ SWFSC	PFMC	Chinook salmon - California Central Valley: Sacramento River Fall	3	Full Update	Yes	
NWFSC/ SWFSC	PFMC	Chinook salmon - Northern California Coast: Klamath River Fall	3	Full Update	Yes	
PIFSC	WPFMC	Main Hawaiian Islands Deep 7 Bottomfish Multi-species Complex	-3	Benchmark	No	Peer review did not recommend use for management advice
SEFSC	GMFMC	Red snapper - Gulf of Mexico	4	Full Update	Yes	Delayed from Q1

**Completed Assessments for FSSI Stocks - FY2015 Quarter 3 (April -June, 2015)**

Science Center(s)	Jurisdiction	Stock	Asmt Level <sup>1</sup>	Asmt Type	Adequate	Notes
AFSC	NPFMC	Golden king crab - Aleutian Islands	1	Full Update	No	
NEFSC	NEFMC	Atlantic herring	5	Full Update	Yes	
NWFSC/ SWFSC	PFMC	Arrowtooth flounder - Pacific Coast	4	Partial Update	Yes	Planned as level 3 benchmark but SSC rejected new approach and remanded to partial update of previous asmt.
NWFSC/ SWFSC	PFMC	Canary rockfish-Pacific Coast	4	Benchmark	Yes	
NWFSC/ SWFSC	PFMC	Chilipepper - S. Pacific Coast	4	Full Update	Yes	
NWFSC / SWFSC	PFMC	Darkblotched rockfish - Pacific Coast	4	Benchmark	Yes	
NWFSC / SWFSC	PFMC	Petrable sole - Pacific Coast	4	Full Update	Yes	
NWFSC / SWFSC	PFMC	Sablefish - Pacific Coast	4	Full Update	Yes	
SEFSC	SAFMC / GMFMC	Mutton snapper - Southern Atlantic Coast / Gulf of Mexico	4	Full Update	Yes	Led by state of Florida
SWFSC	PFMC	Pacific sardine - Pacific Coast	4	Full Update	Yes	
SWFSC	PFMC	Pacific chub mackerel	4	Benchmark	Yes	

## National Marine Fisheries Service - FY2015 Quarter 3

## Appendix A

## Planned Assessments for FSSI Stocks - FY2015 Quarter 4 (July - September, 2015)

Science Center(s)	Jurisdiction	Stock	Planned Asmt Level <sup>1</sup>	Planned Asmt Type	Notes
NEFSC	MAFMC	Atlantic mackerel - Gulf of Maine / Cape Hatteras	4	Partial Update	
NEFSC	MAFMC	Atlantic surfclam - Mid-Atlantic Coast	4	Partial Update	
NEFSC	MAFMC	Black sea bass - Mid-Atlantic Coast	4	Partial Update	
NEFSC	MAFMC	Bluefish - Atlantic Coast	4	Full Update	
NEFSC	MAFMC	Butterfish - Gulf of Maine / Cape Hatteras	5	Partial Update	
NEFSC	MAFMC	Longfin inshore squid - Georges Bank / Cape Hatteras	1	Partial Update	
NEFSC	MAFMC	Northern shortfin squid - Northwestern Atlantic Coast	2	Partial Update	
NEFSC	MAFMC	Scup - Atlantic Coast	4	Partial Update	
NEFSC	MAFMC	Summer flounder - Mid-Atlantic Coast	4	Full Update	
NEFSC	MAFMC	Tilefish - Mid-Atlantic Coast	4	Partial Update	
NEFSC	NEFMC	Barndoor skate - Georges Bank / Southern New England	1	Partial Update	
NEFSC	NEFMC	Clearnose skate - Southern New England / Mid-Atlantic	1	Partial Update	
NEFSC	NEFMC	Little skate - Georges Bank / Southern New England	1	Partial Update	
NEFSC	NEFMC	Rosette skate - Southern New England / Mid-Atlantic	1	Partial Update	
NEFSC	NEFMC	Sea scallop - Northwestern Atlantic Coast	4	Partial Update	
NEFSC	NEFMC	Smooth skate - Gulf of Maine	1	Partial Update	
NEFSC	NEFMC	Thorny skate - Gulf of Maine	1	Partial Update	
NEFSC	NEFMC	Winter skate - Georges Bank / Southern New England	1	Partial Update	
NEFSC	NEFMC / MAFMC	Spiny dogfish - Atlantic Coast	4	Full Update	
NWFSC/ SWFSC	PFMC	Black rockfish - Northern Pacific Coast	4	Benchmark	
NWFSC/ SWFSC	PFMC	Black rockfish - Southern Pacific Coast	4	Benchmark	
NWFSC/ SWFSC	PFMC	Bocaccio - Southern Pacific Coast	4	Benchmark	
NWFSC/ SWFSC	PFMC	Kelp greenling - Oregon	4	Benchmark	
NWFSC/ SWFSC	PFMC	Widow rockfish - Pacific Coast	4	Benchmark	
PIFSC	WPFMC	American Samoa Bottomfish Multi-species Complex	3	Full Update	
PIFSC	WPFMC	Guam Bottomfish Multi-species Complex	3	Full Update	
PIFSC	WPFMC	Northern Mariana Islands Bottomfish Multi-species Complex	3	Full Update	

National Marine Fisheries Service - FY2015 Quarter 3  
Appendix A

**Planned Assessments for FSSI Stocks - FY2015 Quarter 4 (Continued)**

Science Center(s)	Jurisdiction	Stock	Planned Asmt Level <sup>1</sup>	Planned Asmt Type	Notes
SEFSC	SAFMC	Brown rock shrimp - Southern Atlantic Coast	1	Full Update	Moved from Q3FY15
SEFSC	SAFMC	Brown shrimp - Southern Atlantic Coast	1	Full Update	Moved from Q3FY15
SEFSC	SAFMC	Pink shrimp - Southern Atlantic Coast	1	Full Update	Moved from Q3FY15
SEFSC	SAFMC	White shrimp - Southern Atlantic Coast	1	Full Update	Moved from Q3FY15
SEFSC	GMFMC	Brown shrimp - Gulf of Mexico	4	Full Update	
SEFSC	GMFMC	Gray triggerfish - Gulf of Mexico	4	Full Update	SEDAR Review Workshop scheduled for Q4; asmt may not be finalized through SSC until Q1FY2016
SEFSC	GMFMC	Pink shrimp - Gulf of Mexico	4	Full Update	
SEFSC	GMFMC	Red grouper - Gulf of Mexico	4	Benchmark	SEDAR Review Workshop scheduled for Q4; asmt may not be finalized through SSC until Q1FY2016
SEFSC	GMFMC	Royal red shrimp - Gulf of Mexico	1	Full Update	
SEFSC	GMFMC	White shrimp - Gulf of Mexico	4	Full Update	
SEFSC	HMS	Blue shark - North Atlantic	4	Benchmark	

**Footnotes**

<sup>1</sup>Level of complexity of assessment methods used for the particular stock. Generally reflects the availability of data and the value or importance of the fishery. Levels are described in the Stock Assessment Improvement Plan (<http://www.st.nmfs.noaa.gov/StockAssessment/index.html>). A negative level indicates that an assessment was attempted at that level of complexity, but the effort was not accepted in its technical review.

**Appendix B. Assessment activity for non-FSSI stocks, stock complexes and complex members in FY2015. Information on planned assessments is best available and subject to change.**

**Completed Assessments for Non-FSSI Stocks - FY2015 Quarter 1 (October - December, 2014)**

Science Center(s)	Jurisdiction	Stock	Asmt Level <sup>1</sup>	Asmt Type	Notes on Assessment
AFSC	NPFMC	Atka mackerel - Gulf of Alaska	1	Partial Update	
AFSC	NPFMC	Bering Sea / Aleutian Islands Other Flatfish Complex	3	Benchmark	
AFSC	NPFMC	Bering Sea / Aleutian Islands Other Rockfish Complex	3	Benchmark	
AFSC	NPFMC	Bering Sea / Aleutian Islands Other Skates Complex	3	Benchmark	Remainder of Bering Sea / Aleutian Islands Skate Complex
AFSC	NPFMC	Bering Sea / Aleutian Islands Sculpin Complex	3	Benchmark	
AFSC	NPFMC	Bering Sea / Aleutian Islands Shark Complex	1	Full Update	
AFSC	NPFMC	Bering Sea / Aleutian Islands Squid Complex	1	Benchmark	
AFSC	NPFMC	Giant octopus - Bering Sea / Aleutian Islands	1	Full Update	Indicator stock for Bering Sea / Aleutian Islands Octopus Complex
AFSC	NPFMC	Giant octopus - Gulf of Alaska	1	Full Update	Indicator stock for Gulf of Alaska Octopus Complex
AFSC	NPFMC	Gulf of Alaska Other Deepwater Flatfish Complex	1	Partial Update	Remainder of Gulf of Alaska Deepwater Flatfish Complex
AFSC	NPFMC	Gulf of Alaska Other Rockfish Complex	2	Partial Update	
AFSC	NPFMC	Gulf of Alaska Other Shallow Water Flatfish Complex	3	Partial Update	Remainder of Gulf of Alaska Shallow Water Flatfish Complex
AFSC	NPFMC	Gulf of Alaska Sculpin Complex	3	Partial Update	
AFSC	NPFMC	Gulf of Alaska Shark Complex	1	Partial Update	
AFSC	NPFMC	Gulf of Alaska Skate Complex	3	Benchmark	
AFSC	NPFMC	Gulf of Alaska Squid Complex	1	Partial Update	
AFSC	NPFMC	Kamchatka flounder - Bering Sea / Aleutian Islands	4	Full Update	
AFSC	NPFMC	Pacific cod - Aleutian Islands	3	Full Update	
AFSC	NPFMC	Rock sole - Gulf of Alaska	4	Full Update	Indicator (along with Northern rock sole) for Gulf of Alaska Shallow Water Flatfish Complex
AFSC	NPFMC	Shortraker rockfish - Bering Sea / Aleutian Islands	3	Benchmark	
AFSC	NPFMC	Shortraker rockfish - Gulf of Alaska	3	Partial Update	
AFSC	NPFMC	Walleye pollock - Bogoslof	3	Full Update	
AFSC	NPFMC	Walleye pollock - Southeast Gulf of Alaska	3	Partial Update	
SEFSC	HMS	Bluefin tuna - Western Atlantic	4	Full Update	ICCAT assessment
SEFSC	HMS	Skipjack tuna - Western Atlantic	3	Benchmark	ICCAT assessment
SEFSC	SAFMC	Hogfish - Carolinas	-4	Benchmark	Data insufficient for assessment

## National Marine Fisheries Service - FY2015 Quarter 3

## Appendix B.

**Completed Assessments for Non-FSSI Stocks - FY2015 Quarter 2 (January - March, 2015)**

Science Center(s)	Jurisdiction	Stock	Asmt Level <sup>1</sup>	Asmt Type	Notes on Assessment
NWFSC	PFMC	Pacific hake - Pacific Coast	4	Benchmark	
NWFSC/ SWFSC	PFMC	Chinook salmon - California Central Valley: Sacramento (spring)	1	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - California Central Valley: Sacramento (winter)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Columbia River Basin: Lower River Hatchery (fall)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Columbia River Basin: Lower River Hatchery (spring)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Columbia River Basin: Mid- River Bright Hatchery (fall)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Columbia River Basin: North Lewis (fall)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Columbia River Basin: Snake (fall)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Columbia River Basin: Snake (spring/summer)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Columbia River Basin: Spring Creek Hatchery (fall)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Columbia River Basin: Upper River (spring)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Columbia River Basin: Upper River (summer)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Columbia River Basin: Upper River Bright (fall)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Columbia River Basin: Upper Willamette (spring)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Northern California Coast: Eel, Mattole, and Mad (fall/spring)	1	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Oregon Coast: Central and Northern	3	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Oregon Coast: Southern	3	Benchmark	
NWFSC/ SWFSC	PFMC	Chinook salmon - Puget Sound: Cedar (summer/fall)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Puget Sound: Eastern Strait of Juan de Fuca (summer/fall)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Puget Sound: Green (summer/fall)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Puget Sound: Mid Hood Canal (summer/fall)	1	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Puget Sound: Nisqually (summer/fall)	1	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Puget Sound: Nooksack (spring early)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Puget Sound: Puyallup (summer/fall)	3	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Puget Sound: Skagit (spring)	3	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Puget Sound: Skagit (summer/fall)	5	Full Update	

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## Appendix B.

**Completed Assessments for Non-FSSI Stocks - FY2015 Quarter 2 (Continued)**

Science Center(s)	Jurisdiction	Stock	Asmt Level <sup>1</sup>	Asmt Type	Notes on Assessment
NWFSC/ SWFSC	PFMC	Chinook salmon - Puget Sound: Skokomish (summer/fall)	1	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Puget Sound: Snohomish (summer/fall)	5	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Puget Sound: Stillaguamish (summer/fall)	5	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Puget Sound: White (spring)	3	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Washington Coast: Grays Harbor (fall)	4	Benchmark	
NWFSC/ SWFSC	PFMC	Chinook salmon - Washington Coast: Grays Harbor (spring)	1	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Washington Coast: Hoh (fall)	1	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Washington Coast: Hoh (spring/summer)	1	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Washington Coast: Hoko (summer/fall)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Washington Coast: Queets (fall)	5	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Washington Coast: Queets (spring/summer)	2	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Washington Coast: Quillayute (fall)	2	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Washington Coast: Quillayute (spring/summer)	1	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Washington Coast: Quinault Fall (hatchery)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Washington Coast: Willapa Bay Fall (hatchery)	4	Full Update	
NWFSC/ SWFSC	PFMC	Chinook salmon - Washington Coast: Willapa Bay Fall (natural)	4	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Oregon Production Index Area: Central California Coast	1	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Oregon Production Index Area: Columbia (early hatchery)	4	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Oregon Production Index Area: Columbia (late hatchery)	4	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Oregon Production Index Area: Columbia (natural)	4	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Oregon Production Index Area: Northern California	1	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Oregon Production Index Area: Oregon Coastal (hatchery)	1	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Oregon Production Index Area: Oregon Coastal (natural)	5	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Puget Sound: Hood Canal	4	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Puget Sound: Skagit	5	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Puget Sound: Snohomish	4	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Puget Sound: South Puget Sound (hatchery)	4	Full Update	

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## Appendix B.

**Completed Assessments for Non-FSSI Stocks - FY2015 Quarter 2 (Continued)**

Science Center(s)	Jurisdiction	Stock	Asmt Level <sup>1</sup>	Asmt Type	Notes on Assessment
NWFSC/ SWFSC	PFMC	Coho salmon - Puget Sound: Stillaguamish	4	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Washington Coast: Grays Harbor	5	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Washington Coast: Hoh	5	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Washington Coast: Queets	5	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Washington Coast: Quillayute (fall)	4	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Washington Coast: Quillayute (summer)	4	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Washington Coast: Quinault	1	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Washington Coast: Strait of Juan de Fuca	5	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Washington Coast: Willapa Bay	5	Full Update	
NWFSC/ SWFSC	PFMC	Coho salmon - Washington Coast: Willapa Bay (natural)	5	Benchmark	
NWFSC/ SWFSC	PFMC	Pink salmon - Puget Sound (odd-numbered years)	1	Full Update	
SEFSC	HMS	Smoothhounds (Mustelus spp.) - Atlantic	4	New	
SEFSC	HMS	Smoothhounds (Mustelus spp.) - Gulf of Mexico	3	New	

**Completed Assessments for Non-FSSI Stocks - FY2015 Quarter 3 (April -June, 2015)**

Science Center(s)	Jurisdiction	Stock	Asmt Level <sup>1</sup>	Asmt Type	Notes on Assessment
AFSC	NPFMC	Golden king crab - Pribilof Islands	1	Annual update	
AFSC	NPFMC	Red king crab - Western Aleutian Islands	1	Annual update	
AFSC	NPFMC	Weathervane scallop - Alaska	1	Annual update	

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**Planned Assessments for Non-FSSI Stocks - FY2015 Quarter 4 (July - September, 2015)**

Science Center(s)	Jurisdiction	Stock	Planned Asmt Level <sup>1</sup>	Planned Asmt Type	Notes on Assessment
AFSC	NPFMC	Chinook salmon - Eastern North Pacific Far North Migrating	4	Annual update	
AFSC	NPFMC	Coho salmon - Auke Creek	4	Annual update	One of four coho indicator stocks for the Alaska Coho Salmon Assemblage
AFSC	NPFMC	Coho salmon - Berners River	4	Annual update	One of four coho indicator stocks for the Alaska Coho Salmon Assemblage
AFSC	NPFMC	Coho salmon - Ford Arm Lake	4	Annual update	One of four coho indicator stocks for the Alaska Coho Salmon Assemblage
AFSC	NPFMC	Coho salmon - Hugh Smith Lake	4	Annual update	One of four coho indicator stocks for the Alaska Coho Salmon Assemblage
NWFSC/ SWFSC	PFMC	China rockfish - Pacific Coast	4	Benchmark	
SEFSC	HMS	Bigeye tuna - Atlantic	3	tbd	Conducted with ICCAT
SWFSC/ PIFSC	PFMC / WPFMC	Bigeye tuna - Eastern Pacific	4	tbd	Conducted with IATTC
SWFSC/ PIFSC	PFMC / WPFMC	Shortfin mako - North Pacific	2	tbd	Conducted with ISC
SWFSC/ PIFSC	PFMC / WPFMC	Skipjack tuna - Eastern Pacific	1	tbd	Conducted with IATTC
SWFSC/ PIFSC	PFMC / WPFMC	Striped marlin - Eastern Pacific	4	tbd	Conducted with IATTC
SWFSC/ PIFSC	PFMC / WPFMC	Striped marlin - Western and Central Pacific	4	tbd	Conducted with ISC
SWFSC/ PIFSC	PFMC / WPFMC	Yellowfin tuna - Eastern Pacific	4	tbd	Conducted with IATTC

**Footnotes**

<sup>1</sup>Level of complexity of assessment methods used for the particular stock. Generally reflects the availability of data and the value or importance of the fishery. Levels are described in the Stock Assessment Improvement Plan (<http://www.st.nmfs.noaa.gov/StockAssessment/index.html>). A negative level indicates that an assessment was attempted at that level of complexity, but the effort was not accepted in its technical review.