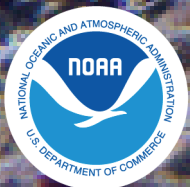


# Fish Assessment Report

FY 2019 Report



**NOAA**  
FISHERIES

**Science and  
Technology**

# Overview

NOAA Fisheries uses stock assessments to monitor the condition of nearly 500 fish stocks and stock complexes (groups of similar stocks managed together). Stock assessments are scientific efforts that involve data collection, data processing, and mathematical modeling that estimate the health and size of a fish stock, measure how fishing affects the stock, and project harvest levels that achieve the largest sustainable long-term yield (Figure 1). This page provides an annual report, broken out by fiscal year (October 1 – September 30) and quarter, detailing NOAA Fisheries' planned and completed stock assessments.

Stock assessments are the backbone of sustainable fisheries management. Fishery managers use the results of assessments to evaluate the status of fish stocks and set annual catch limits (ACLs). An ACL is the largest amount of fish that commercial and recreational fisheries can sustainably harvest from a stock in one year. They help prevent overfishing (catching too many fish) from occurring and help fishers to catch the maximum number of fish over the long-term. NOAA Fisheries works with its partners in each management area to conduct stock assessments, but does not assess all managed stocks each year. Each region rotates the stocks it assesses based upon the availability of data, the complexity of available data, the structure and diversity of local fisheries, its available resources, and the regional processes for scheduling, reviewing, and using stock assessment results in management.

NOAA Fisheries sorts stocks into two general categories for tracking and reporting purposes. It tracks the stocks with higher levels of commercial, recreational, or ecological value as components of the Fish Stock Sustainability Index (FSSI). NOAA Fisheries prioritizes FSSI stocks for assessments that make use of its most advanced techniques and tools. NOAA Fisheries also conducts stock assessments of many stocks not on the FSSI list (non-FSSI stocks) in order to provide the necessary management advice for them.

## NOAA Fisheries Stock Assessment Process

The Science Behind Sustainable Fisheries Management



**Healthy Fish Stocks**  
= Sustainable Jobs,  
Fisheries, and Food

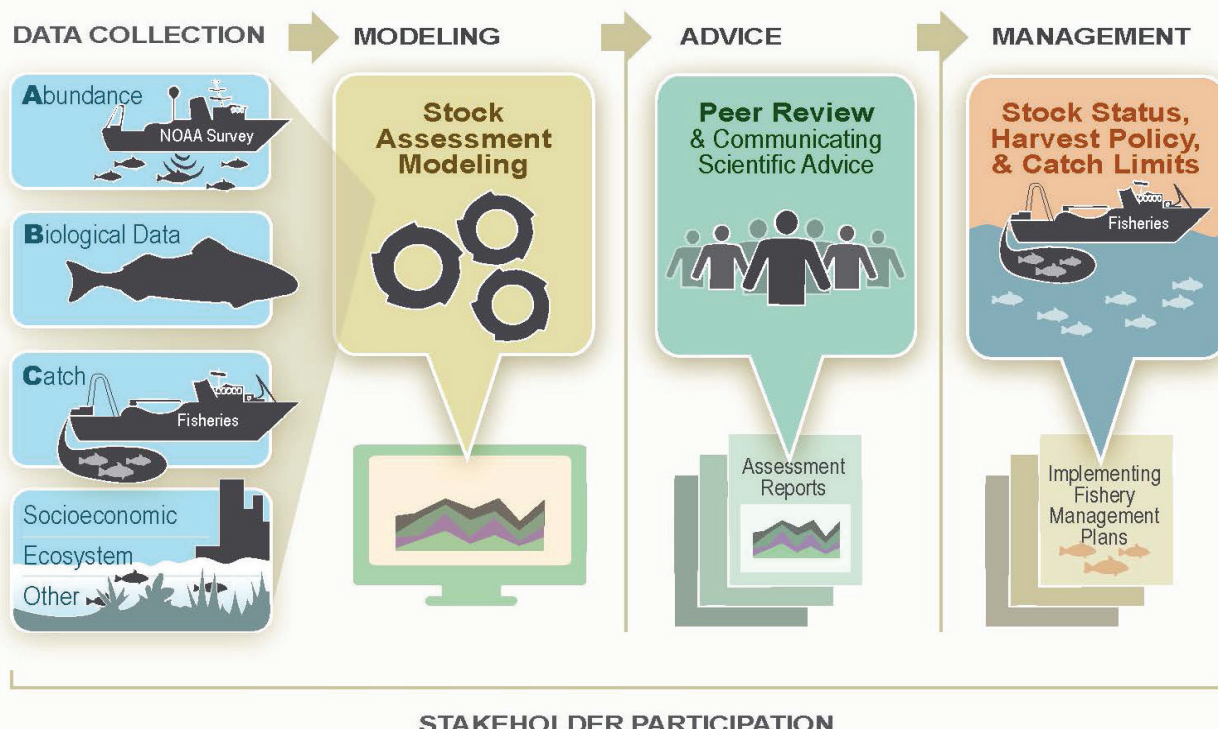


Figure 1: Overview of the stock assessment process from data collection through the provision of scientific advice to fishery managers. Stakeholders and other partners participate in each step of the assessment process. This report captures NOAA Fisheries products associated with the 'Advice' phase of the process.

# Planned and Completed Assessments

NOAA Fisheries planned 171 stock assessments for the 2019 fiscal year (October 1 - September 30). Due to schedule changes highlighted in Appendices A and B, the actual count of completed stock assessments for 2019 was 187. That included 83 assessments of FSSI stocks and 104 assessments of non-FSSI stocks. The tables below show the regional breakdown of this year's planned and completed FSSI and non-FSSI stock assessments. Complete lists are available in Appendix A for assessed FSSI stocks, Appendix B for assessed non-FSSI stocks, and Appendix C for planned assessments in 2019.

## Planned Assessments

| Region           | Quarter 1 |           | Quarter 2 |           | Quarter 3 |           | Quarter 4 |           | Total      |            |
|------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|
|                  | FSSI      | Non-FSSI  | FSSI      | Non-FSSI  | FSSI      | Non-FSSI  | FSSI      | Non-FSSI  | FSSI       | Non-FSSI   |
| Alaska           | 31        | 13        | 0         | 0         | 1         | 1         | 0         | 4         | 32         | 18         |
| West Coast*      | 0         | 0         | 2         | 64        | 5         | 0         | 4         | 1         | 11         | 65         |
| Pacific Islands  | 0         | 0         | 0         | 1         | 3         | 12        | 0         | 3         | 3          | 16         |
| Greater Atlantic | 0         | 0         | 1         | 0         | 0         | 0         | 6         | 1         | 7          | 1          |
| Southeast        | 2         | 0         | 14        | 0         | 0         | 0         | 0         | 2         | 16         | 2          |
| <b>Subtotal</b>  | <b>33</b> | <b>13</b> | <b>17</b> | <b>65</b> | <b>9</b>  | <b>13</b> | <b>10</b> | <b>11</b> | <b>69</b>  | <b>102</b> |
| <b>Total</b>     | <b>46</b> |           | <b>82</b> |           | <b>22</b> |           | <b>21</b> |           | <b>171</b> |            |

## Completed Assessments

| Region           | Quarter 1             |                 | Quarter 2             |           | Quarter 3             |           | Quarter 4             |                       | Total                  |                        |
|------------------|-----------------------|-----------------|-----------------------|-----------|-----------------------|-----------|-----------------------|-----------------------|------------------------|------------------------|
|                  | FSSI                  | Non-FSSI        | FSSI                  | Non-FSSI  | FSSI                  | Non-FSSI  | FSSI                  | Non-FSSI              | FSSI                   | Non-FSSI               |
| Alaska           | 33 <sup>+</sup>       | 11 <sup>-</sup> | 1 <sup>+</sup>        | 0         | 3 <sup>+</sup>        | 1         | 0                     | 3 <sup>-</sup>        | 37 <sup>+</sup>        | 15 <sup>-</sup>        |
| West Coast*      | 0                     | 0               | 2                     | 64        | 2 <sup>-</sup>        | 0         | 19 <sup>+</sup>       | 6 <sup>+</sup>        | 23 <sup>+</sup>        | 70 <sup>+</sup>        |
| Pacific Islands  | 0                     | 0               | 0                     | 1         | 0 <sup>-</sup>        | 12        | 3 <sup>+</sup>        | 3                     | 3                      | 16                     |
| Greater Atlantic | 0                     | 0               | 1                     | 0         | 0                     | 0         | 15 <sup>+</sup>       | 1                     | 16 <sup>+</sup>        | 1                      |
| Southeast        | 1 <sup>-</sup>        | 2 <sup>+</sup>  | 3 <sup>-</sup>        | 0         | 0                     | 0         | 0                     | 0                     | 4 <sup>-</sup>         | 2                      |
| <b>Subtotal</b>  | <b>34<sup>+</sup></b> | <b>13</b>       | <b>7<sup>-</sup></b>  | <b>65</b> | <b>5<sup>-</sup></b>  | <b>13</b> | <b>37<sup>+</sup></b> | <b>13<sup>+</sup></b> | <b>83<sup>+</sup></b>  | <b>104<sup>+</sup></b> |
| <b>Total</b>     | <b>47<sup>+</sup></b> |                 | <b>72<sup>-</sup></b> |           | <b>18<sup>-</sup></b> |           | <b>50<sup>+</sup></b> |                       | <b>187<sup>+</sup></b> |                        |

Footnotes:

\* The West Coast region includes the Northwest and Southwest Fisheries Science Centers.

\*\* Superscript symbols indicate increases "+" and decreases "-" in the number of completed assessments relative to the number of planned assessments.

# Stock Assessment Model

Stock assessment models evaluate important aspects of fish biology that shape a stock’s current and future condition. NOAA Fisheries uses a variety of models to conduct stock assessments (Figure 2). When stock assessment scientists conduct an assessment they identify and develop appropriate models based upon the available data. Those models fit into one of six general categories based upon their data requirements and products:

1. Data-limited

2. Index-based

3. Aggregate biomass dynamics
4. Virtual population analysis

5. Statistical catch-at-length

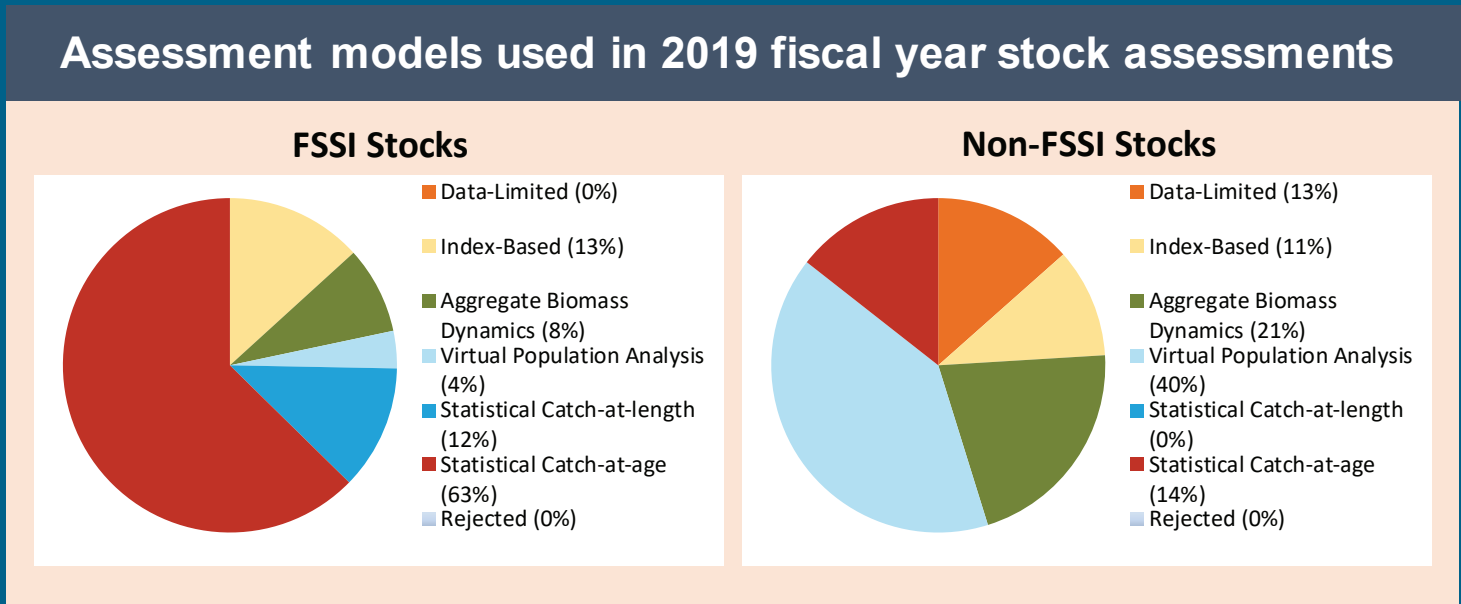
6. Statistical catch-at-age

Data-limited and index-based methods are the most basic model types used by NOAA Fisheries. They provide simplified catch advice when there are limited stock-level data. Data requirements for these methods include the total catch of a stock over time or a survey-based index of total stock abundance. NOAA Fisheries has catch data available for the majority of the stocks it assesses.

The remaining modeling methods are more complex and require additional data such as the length composition (number of fish at each length category) or age composition (number of fish at each age) of a stock. These models utilize these data and advanced statistical techniques to provide comprehensive advice to fishery managers. That advice allows managers to set harvest targets, select appropriate control rules, and determine stock status.

A stock status determination includes evaluations of whether or not a stock is undergoing overfishing (being harvested above sustainable levels), overfished (has a population below a healthy level), or approaching an overfished state (is likely to become overfished in the next two years).

Stock assessment results can only be used in management after reviewers evaluate them for accuracy. When a stock assessment successfully completes its review, it is certified as the “best scientific information available”. Occasionally, a stock assessment will fail its review and have its results rejected. The results of rejected assessments are not suitable for use in fisheries management. No stock assessments were rejected during the 2019 fiscal year.



# Stock Assessment Type

Stock assessments are a process intended to produce a product (management advice). The amount of effort involved in the stock assessment process and the product created by it varies around the United States. Because stock assessments are major scientific efforts, some regions conduct intermediate analyses that update ACLs in between assessments. As a result, stock assessment activities can be subdivided into two general categories (Figure 3).

- **Operational Stock Assessments** – Analyses conducted to provide scientific advice to fishery managers. These are NOAA Fisheries’ principal assessment-related activities and include efforts to create new assessment models and efforts that update existing models with the most recent data. At minimum, operational stock assessments make ACL recommendations. Those with more complex models also inform decisions related to stock status.
- **Stock Monitoring Updates** – Activities that provide stock management advice to fishery managers between operational stock assessments. These analyses involve re-running the latest model (completed during an operational stock assessment) and/or forecast with updated catch information to develop new catch advice.

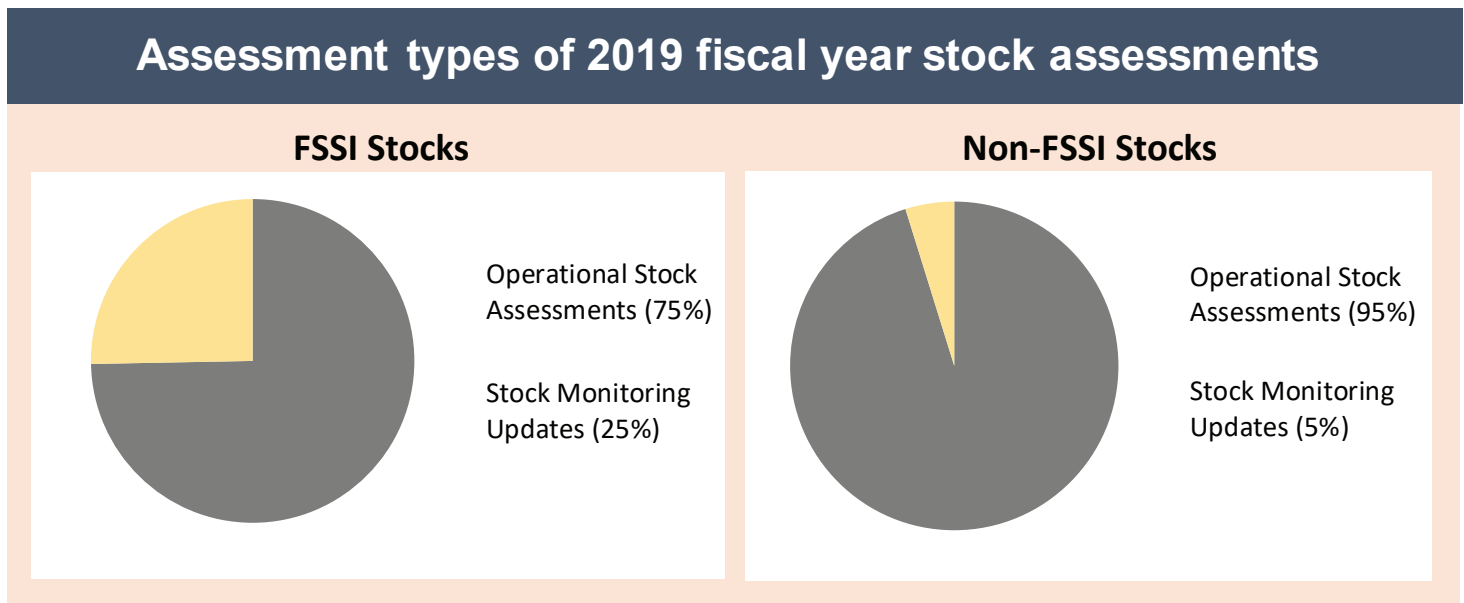


Figure 3: Breakdown of effort levels put forward in stock assessments for FSSI and non-FSSI stocks assessed in 2019.

# Stock Assessment Program Performance

NOAA Fisheries monitors the performance of its stock assessment enterprise over time (Figure 4). One major measure of the enterprise’s performance is the percentage of FSSI stocks with “adequate” stock assessments. Adequate stock assessments are defined as stock assessments that:

- Provide a model-derived estimate of total stock abundance, and
- Were completed within the last five years

Assessment model types that estimate total stock abundance include aggregate biomass dynamics, virtual population analysis, statistical catch-at-length, and statistical catch-at-age.

## NOAA fisheries assessment trends for FSSI stocks

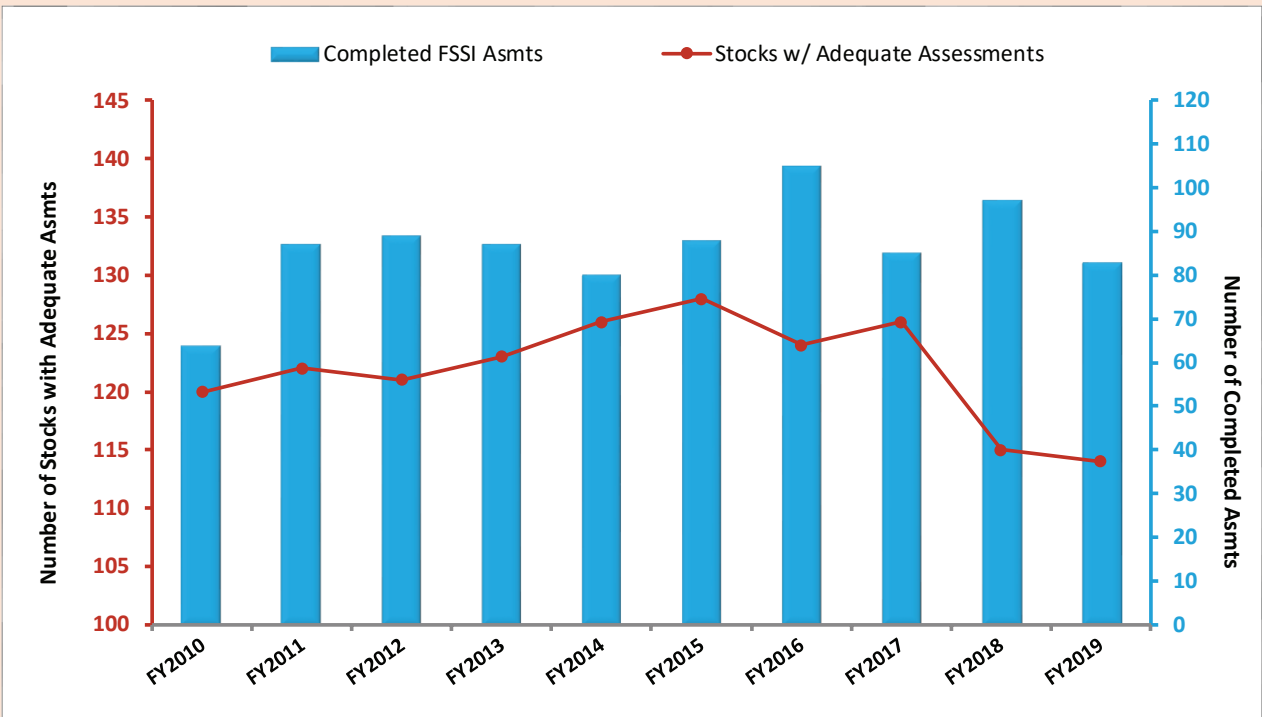


Figure 4: The number of FSSI stock assessments completed by NOAA Fisheries annually (blue bars) and the number of FSSI stocks with adequate stock assessments (red solid line). Please see Appendix D for a table listing the most recent assessment and adequacy status of all FSSI stocks.

A downward trend in the number of stocks with adequate assessments is apparent beginning in fiscal year 2016. This is primarily due to a shift in NOAA Fisheries’ priorities as it works to fulfill its statutory requirement of developing science-based ACLs for all federally managed stocks. NOAA Fisheries has extended the time between stock assessments of FSSI stocks in order to facilitate more first-time stock assessments of non-FSSI stocks. This in-turn resulted in some FSSI stocks’ assessments becoming inadequate. This trend is expected to reverse over the next several years as NOAA Fisheries implements the recommendations put forward in the 2018 Next Generation Stock Assessment Improvement Plan and completes its planned first-time stock assessments of numerous non-FSSI stocks. It is important to note that many stock assessments deemed inadequate still provide useful harvest recommendations that inform fisheries management decisions.



# Scientific Surveys

NOAA Fisheries scientific surveys are the primary method used to collect data on the number of fish in a given stock. These fishery-independent surveys, conducted aboard NOAA ships, chartered commercial fishing vessels, or by collaborative partners (e.g. research universities or state governments), follow a statistical sampling design that measures abundance throughout a stock's range. During them, scientists measure the numbers of each stock of fish in a given area. Many stock assessments rely on the data collected by scientific surveys.

NOAA Fisheries completed 48 scientific surveys during the 2019 fiscal year. Of those, 28 were conducted aboard NOAA ships, and 20 were conducted aboard chartered commercial vessels or partner vessels. The appendices provide lists of completed surveys (Appendix E) and planned surveys (Appendix F).

## Planned Surveys

| Region           | Quarter 1 |          | Quarter 2 |          | Quarter 3 |          | Quarter 4 |           | Total     |           |
|------------------|-----------|----------|-----------|----------|-----------|----------|-----------|-----------|-----------|-----------|
|                  | NOAA      | Charter  | NOAA      | Charter  | NOAA      | Charter  | NOAA      | Charter   | NOAA      | Charter   |
| Alaska           | 0         | 0        | 2         | 0        | 2         | 1        | 2         | 8         | 6         | 9         |
| West Coast*      | 0         | 2        | 1         | 0        | 2         | 1        | 5         | 5         | 8         | 9         |
| Pacific Islands  | 1         | 0        | 0         | 0        | 1         | 0        | 1         | 0         | 3         | 0         |
| Greater Atlantic | 1         | 1        | 0         | 0        | 2         | 0        | 3         | 2         | 6         | 3         |
| Southeast        | 1         | 0        | 0         | 0        | 2         | 0        | 4         | 1         | 7         | 1         |
| <b>Subtotal</b>  | <b>3</b>  | <b>3</b> | <b>3</b>  | <b>0</b> | <b>9</b>  | <b>2</b> | <b>15</b> | <b>16</b> | <b>30</b> | <b>22</b> |
| <b>Total</b>     | <b>6</b>  |          | <b>3</b>  |          | <b>11</b> |          | <b>31</b> |           | <b>52</b> |           |

## Completed Surveys

| Region           | Quarter 1 |          | Quarter 2            |                      | Quarter 3             |                      | Quarter 4             |                       | Total                 |                       |
|------------------|-----------|----------|----------------------|----------------------|-----------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                  | NOAA      | Charter  | NOAA                 | Charter              | NOAA                  | Charter              | NOAA                  | Charter               | NOAA                  | Charter               |
| Alaska           | 0         | 0        | 1 <sup>-</sup>       | 1 <sup>+</sup>       | 1 <sup>-</sup>        | 0 <sup>-</sup>       | 2                     | 7 <sup>-</sup>        | 4 <sup>-</sup>        | 8 <sup>-</sup>        |
| West Coast*      | 0         | 2        | 1                    | 1 <sup>+</sup>       | 4 <sup>+</sup>        | 2 <sup>+</sup>       | 3 <sup>-</sup>        | 1 <sup>-</sup>        | 8                     | 6 <sup>-</sup>        |
| Pacific Islands  | 1         | 0        | 0                    | 0                    | 1                     | 0                    | 1                     | 0                     | 3                     | 0                     |
| Greater Atlantic | 1         | 1        | 0                    | 0                    | 2                     | 2 <sup>+</sup>       | 3                     | 1 <sup>-</sup>        | 6                     | 4 <sup>+</sup>        |
| Southeast        | 1         | 0        | 0                    | 0                    | 1 <sup>-</sup>        | 0                    | 5 <sup>+</sup>        | 2 <sup>+</sup>        | 7                     | 2 <sup>+</sup>        |
| <b>Subtotal</b>  | <b>3</b>  | <b>3</b> | <b>2<sup>-</sup></b> | <b>2<sup>+</sup></b> | <b>9</b>              | <b>4<sup>+</sup></b> | <b>14<sup>-</sup></b> | <b>11<sup>-</sup></b> | <b>28<sup>-</sup></b> | <b>20<sup>-</sup></b> |
| <b>Total</b>     | <b>6</b>  |          | <b>4<sup>+</sup></b> |                      | <b>13<sup>+</sup></b> |                      | <b>25<sup>-</sup></b> |                       | <b>48<sup>-</sup></b> |                       |

Footnotes:

\* The West Coast region includes the Northwest and Southwest Fisheries Science Centers.

\*\* Superscript symbols indicate increases "+" and decreases "-" in the number of completed assessments relative to the number of planned assessments. Changes are the result of factors such as ship and funding availability.

# Frequently Asked Questions

**What is a stock assessment?**

A stock assessment is the process of collecting, analyzing, and reporting demographic information to determine the effects of fishing (and other drivers) on fish populations and, to the extent possible, predict future catch and stock status.

**What data are used in stock assessments?**

Stock assessments are typically based on models of fish populations and fisheries that require three primary categories of data inputs: catch, abundance, and biology, although data-limited assessments can be conducted when one or more of these data types are missing. Data inputs must be accurate and timely to ensure the highest quality stock assessments. To the extent feasible, ecosystem and environmental factors that affect fish stocks are included.

**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, calculating sustainable harvest rates, and forecasting catch levels 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 after being subjected to regional peer review processes. The definition of an adequate assessment will change as NOAA Fisheries finalizes and implements the Next Generation Stock Assessment Improvement Plan.

**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?**

<https://www.fisheries.noaa.gov/topic/population-assessments/fish-stocks>  
<https://www.st.nmfs.noaa.gov/stocksmart>  
<https://www.fisheries.noaa.gov/national/population-assessments/fish-stock-assessment-report>

|   |   |
|---|---|
| <b>Alaska Fisheries Science Center --</b>         | <a href="https://www.fisheries.noaa.gov/region/alaska">https://www.fisheries.noaa.gov/region/alaska</a>                                     |
| <b>Northwest Fisheries Science Center --</b>      | <a href="https://www.fisheries.noaa.gov/region/west-coast">https://www.fisheries.noaa.gov/region/west-coast</a>                             |
| <b>Southwest Fisheries Science Center --</b>      | <a href="https://www.fisheries.noaa.gov/region/west-coast">https://www.fisheries.noaa.gov/region/west-coast</a>                             |
| <b>Pacific Island Fisheries Science Center --</b> | <a href="https://www.fisheries.noaa.gov/region/pacific-islands">https://www.fisheries.noaa.gov/region/pacific-islands</a>                   |
| <b>Southeast Fisheries Science Center --</b>      | <a href="https://www.fisheries.noaa.gov/region/southeast">https://www.fisheries.noaa.gov/region/southeast</a>                               |
| <b>Northeast Fisheries Science Center --</b>      | <a href="https://www.fisheries.noaa.gov/region/new-england-mid-atlantic">https://www.fisheries.noaa.gov/region/new-england-mid-atlantic</a> |



## Appendix A. Assessment activity for stocks and stock complexes included on the FSSI by quarter for FY2019.

### Completed Assessments for FSSI Stocks - FY2019 Quarter 1 (October - December, 2018)

| Science Center(s) <sup>1</sup> | Jurisdiction <sup>2</sup> | Stock  | Model Class <sup>3</sup> | Asmt Type <sup>4</sup>              | Adequate | Notes                          |
|--------------------------------|---------------------------|--|--------------------------|-------------------------------------|----------|--------------------------------|
| AFSC                           | NPFMC                     | Alaska plaice - Bering Sea / Aleutian Islands                            | 6                        | Stock Monitoring Analysis           | Y        |                                |
| AFSC                           | NPFMC                     | Alaska skate - Bering Sea / Aleutian Islands                             | 6                        | Operational Stock Assessment        | Y        |                                |
| AFSC                           | NPFMC                     | Arrowtooth flounder - Bering Sea / Aleutian Islands                      | 6                        | Operational Stock Assessment        | Y        |                                |
| AFSC                           | NPFMC                     | Arrowtooth flounder - Gulf of Alaska                                     | 6                        | Stock Monitoring Analysis           | Y        |                                |
| AFSC                           | NPFMC                     | Atka mackerel - Bering Sea / Aleutian Islands                            | 6                        | Operational Stock Assessment        | Y        |                                |
| AFSC                           | NPFMC                     | Bering Sea / Aleutian Islands Blackspotted and Rougheye Rockfish Complex | 6                        | Operational Stock Assessment        | Y        |                                |
| AFSC                           | NPFMC                     | Blue king crab - Saint Matthew Island                                    | 5                        | Operational Stock Assessment        | Y        |                                |
| AFSC                           | NPFMC                     | Dover sole - Gulf of Alaska  | 6                        | Stock Monitoring Analysis           | Y        |                                |
| AFSC                           | NPFMC                     | Dusky rockfish - Gulf of Alaska  | 6                        | Operational Stock Assessment        | Y        |                                |
| AFSC                           | NPFMC                     | Flathead sole - Bering Sea / Aleutian Islands                            | 6                        | Operational Stock Assessment        | Y        |                                |
| AFSC                           | NPFMC                     | Flathead sole - Gulf of Alaska   | 6                        | Stock Monitoring Analysis           | Y        |                                |
| AFSC                           | NPFMC                     | Greenland halibut - Bering Sea / Aleutian Islands                        | 6                        | Operational Stock Assessment        | Y        |                                |
| AFSC                           | NPFMC                     | Gulf of Alaska Blackspotted and Rougheye Rockfish Complex                | 6                        | Stock Monitoring Analysis           | Y        |                                |
| <b>AFSC</b>                    | <b>NPFMC</b>              | <b>Northern rock sole - Bering Sea / Aleutian Islands</b>                | <b>6</b>                 | <b>Operational Stock Assessment</b> | <b>Y</b> | <b>Not on initial schedule</b> |
| <b>AFSC</b>                    | <b>NPFMC</b>              | <b>Northern rock sole - Gulf of Alaska</b>                               | <b>6</b>                 | <b>Stock Monitoring Analysis</b>    | <b>Y</b> | <b>Not on initial schedule</b> |
| AFSC                           | NPFMC                     | Northern rockfish - Bering Sea / Aleutian Islands                        | 6                        | Stock Monitoring Analysis           | Y        |                                |
| AFSC                           | NPFMC                     | Northern rockfish - Western / Central Gulf of Alaska                     | 6                        | Operational Stock Assessment        | Y        |                                |
| AFSC                           | NPFMC                     | Pacific cod - Bering Sea   | 6                        | Operational Stock Assessment        | Y        |                                |
| AFSC                           | NPFMC                     | Pacific cod - Gulf of Alaska   | 6                        | Operational Stock Assessment        | Y        |                                |
| AFSC                           | NPFMC                     | Pacific ocean perch - Bering Sea / Aleutian Islands                      | 6                        | Operational Stock Assessment        | Y        |                                |
| AFSC                           | NPFMC                     | Pacific ocean perch - Gulf of Alaska                                     | 6                        | Stock Monitoring Analysis           | Y        |                                |
| AFSC                           | NPFMC                     | Red king crab - Bristol Bay  | 5                        | Operational Stock Assessment        | Y        |                                |

## National Marine Fisheries Service

Updated FY2019 Quarter 4

| <b>Completed Assessments for FSSI Stocks - FY2019 Quarter 1 (October - December, 2018)</b> |                           |  |                         |                              |          |                         |
|--|---------------------------|--|-------------------------|------------------------------|----------|-------------------------|
| Science Center(s) <sup>1</sup>   | Jurisdiction <sup>2</sup> | Stock  | Asmt Level <sup>3</sup> | Asmt Type <sup>4</sup>       | Adequate | Notes                   |
| AFSC   | NPFMC                     | Rex sole - Gulf of Alaska  | 6                       | Stock Monitoring Analysis    | Y        |                         |
| AFSC   | NPFMC                     | Rock sole - Gulf of Alaska   | 6                       | Stock Monitoring Analysis    | Y        |                         |
| AFSC   | NPFMC                     | Sablefish - Eastern Bering Sea / Aleutian Islands / Gulf of Alaska | 6                       | Operational Stock Assessment | Y        |                         |
| AFSC   | NPFMC                     | Shortspine thornyhead - Gulf of Alaska                             | 3                       | Operational Stock Assessment | Y        |                         |
| AFSC   | NPFMC                     | Snow crab - Bering Sea   | 5                       | Operational Stock Assessment | Y        |                         |
| AFSC   | NPFMC                     | Southern Tanner crab - Bering Sea                                  | 5                       | Operational Stock Assessment | Y        |                         |
| AFSC   | NPFMC                     | Walleye pollock - Aleutian Islands                                 | 6                       | Operational Stock Assessment | Y        |                         |
| AFSC   | NPFMC                     | Walleye pollock - Eastern Bering Sea                               | 6                       | Operational Stock Assessment | Y        |                         |
| AFSC   | NPFMC                     | Walleye pollock - Western / Central Gulf of Alaska                 | 6                       | Operational Stock Assessment | Y        |                         |
| AFSC   | NPFMC                     | Yelloweye rockfish - Gulf of Alaska                                | 3                       | Operational Stock Assessment | Y        |                         |
| AFSC   | NPFMC                     | Yellowfin sole - Bering Sea / Aleutian Islands                     | 6                       | Operational Stock Assessment | Y        |                         |
| SEFSC  | HMS                       | Blacktip shark - Gulf of Mexico                                    | 6                       | Operational Stock Assessment | Y        |                         |
| <b>Completed Assessments for FSSI Stocks - FY2019 Quarter 2 (January - March, 2019)</b>    |                           |  |                         |                              |          |                         |
| Science Center(s) <sup>1</sup>   | Jurisdiction <sup>2</sup> | Stock  | Asmt Level <sup>3</sup> | Asmt Type <sup>4</sup>       | Adequate | Notes                   |
| AFSC   | NPFMC                     | Red king crab - Norton Sound                                       | 5                       | Operational Stock Assessment | Y        | Not on initial schedule |
| NEFSC  | NEFMC / MAFMC             | Summer flounder - Mid-Atlantic Coast                               | 6                       | Operational Stock Assessment | Y        |                         |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - California Central Valley: Sacramento River Fall  | 3                       | Operational Stock Assessment | Y        |                         |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Northern California Coast: Klamath River Fall     | 4                       | Operational Stock Assessment | Y        |                         |
| SEFSC  | GMFMC                     | Brown shrimp - Gulf of Mexico                                      | 5                       | Operational Stock Assessment | Y        |                         |
| SEFSC  | GMFMC                     | Pink shrimp - Gulf of Mexico                                       | 5                       | Operational Stock Assessment | Y        |                         |
| SEFSC  | GMFMC                     | White shrimp - Gulf of Mexico                                      | 5                       | Operational Stock Assessment | Y        |                         |
| <b>Completed Assessments for FSSI Stocks - FY2019 Quarter 3 (April - June, 2019)</b>       |                           |  |                         |                              |          |                         |
| Science Center(s) <sup>1</sup>   | Jurisdiction <sup>2</sup> | Stock  | Asmt Level <sup>3</sup> | Asmt Type <sup>4</sup>       | Adequate | Notes                   |
| AFSC   | NPFMC                     | Blue king crab - Pribilof Islands                                  | 2                       | Operational Stock Assessment | N        |                         |

## National Marine Fisheries Service

Updated FY2019 Quarter 4

| Completed Assessments for FSSI Stocks - FY2019 Quarter 3 (April - June, 2019)     |                           |   |                         |                              |          |                         |
|---|---------------------------|---|-------------------------|------------------------------|----------|-------------------------|
| Science Center(s) <sup>1</sup>  | Jurisdiction <sup>2</sup> | Stock   | Asmt Level <sup>3</sup> | Asmt Type <sup>4</sup>       | Adequate | Notes                   |
| AFSC  | NPFMC                     | Golden king crab - Eastern Aleutian Islands           | 5                       | Operational Stock Assessment | Y        | Not on initial Schedule |
| AFSC  | NPFMC                     | Golden king crab - Western Aleutian Islands           | 5                       | Operational Stock Assessment | Y        | Not on initial Schedule |
| SWFSC   | PFMC                      | Pacific chub mackerel - Pacific                       | 6                       | Operational Stock Assessment | Y        |                         |
| SWFSC   | PFMC                      | Pacific sardine - Pacific                             | 6                       | Operational Stock Assessment | Y        |                         |
| Completed Assessments for FSSI Stocks - FY2019 Quarter 4 (July - September, 2019) |                           |   |                         |                              |          |                         |
| Science Center(s) <sup>1</sup>  | Jurisdiction <sup>2</sup> | Stock   | Asmt Level <sup>3</sup> | Asmt Type <sup>4</sup>       | Adequate | Notes                   |
| NEFSC   | MAFMC                     | Black sea bass - Mid-Atlantic Coast                   | 6                       | Operational Stock Assessment | Y        |                         |
| NEFSC   | MAFMC                     | Bluefish - Atlantic Coast                             | 6                       | Operational Stock Assessment | Y        |                         |
| NEFSC   | MAFMC                     | Scup - Atlantic Coast                                 | 6                       | Operational Stock Assessment | Y        |                         |
| NEFSC   | NEFMC                     | Atlantic cod - Eastern Georges Bank                   | 4                       | Operational Stock Assessment | Y        | Conducted by the TRAC   |
| NEFSC   | NEFMC                     | Barndoor skate - Georges Bank / Southern New England  | 2                       | Operational Stock Assessment | N        | Not on initial Schedule |
| NEFSC   | NEFMC                     | Clearnose skate - Georges Bank / Southern New England | 2                       | Operational Stock Assessment | N        | Not on initial Schedule |
| NEFSC   | NEFMC                     | Haddock - Eastern Georges Bank                        | 4                       | Operational Stock Assessment | Y        | Conducted by the TRAC   |
| NEFSC   | NEFMC                     | Little skate - Georges Bank / Southern New England    | 2                       | Operational Stock Assessment | N        | Not on initial Schedule |
| NEFSC   | NEFMC                     | Rosette skate - Georges Bank / Southern New England   | 2                       | Operational Stock Assessment | N        | Not on initial Schedule |
| NEFSC   | NEFMC                     | Smooth skate - Georges Bank / Southern New England    | 2                       | Operational Stock Assessment | N        | Not on initial Schedule |
| NEFSC   | NEFMC                     | Thorny skate - Georges Bank / Southern New England    | 2                       | Operational Stock Assessment | N        | Not on initial Schedule |
| NEFSC   | NEFMC                     | Winter skate - Georges Bank / Southern New England    | 2                       | Operational Stock Assessment | N        | Not on initial Schedule |
| NEFSC   | NEFMC                     | Yellowtail flounder - Georges Bank                    | 2                       | Operational Stock Assessment | N        |                         |
| NEFSC   | NEFMC / MAFMC             | Goosefish - Gulf of Maine / Northern Georges Bank     | 2                       | Operational Stock Assessment | N        | Not on initial Schedule |
| NEFSC   | NEFMC / MAFMC             | Goosefish - Southern Georges Bank / Mid-Atlantic      | 2                       | Operational Stock Assessment | N        | Not on initial Schedule |
| NWFSC / SWFSC   | PFMC                      | Black rockfish - California                           | 6                       | Stock Monitoring Analysis    | Y        | Not on initial Schedule |
| NWFSC / SWFSC   | PFMC                      | Black rockfish - Oregon                               | 6                       | Stock Monitoring Analysis    | Y        | Not on initial Schedule |
| NWFSC / SWFSC   | PFMC                      | Black rockfish - Washington                           | 6                       | Stock Monitoring Analysis    | Y        | Not on initial Schedule |
| NWFSC / SWFSC   | PFMC                      | Blackgill rockfish - Southern California              | 6                       | Stock Monitoring Analysis    | Y        | Not on initial Schedule |

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| Completed Assessments for FSSI Stocks - FY2019 Quarter 4 (July - September, 2019) |                           |   |                         |                              |          |  |
|---|---------------------------|---|-------------------------|------------------------------|----------|--|
| Science Center(s) <sup>1</sup>  | Jurisdiction <sup>2</sup> | Stock   | Asmt Level <sup>3</sup> | Asmt Type <sup>4</sup>       | Adequate | Notes  |
| NWFSC / SWFSC   | PPMC                      | Blackspotted and Rougheye Rockfish Complex                | 6                       | Stock Monitoring Analysis    | Y        | Not on initial Schedule                              |
| NWFSC / SWFSC   | PPMC                      | California Blue and Deacon Rockfish Complex               | 6                       | Stock Monitoring Analysis    | Y        | Not on initial Schedule                              |
| NWFSC / SWFSC   | PPMC                      | Cabazon - Northern California                             | 6                       | Operational Stock Assessment | Y        | Not on initial Schedule                              |
| NWFSC / SWFSC   | PPMC                      | Cabazon - Southern California                             | 6                       | Operational Stock Assessment | Y        | Not on initial Schedule                              |
| NWFSC / SWFSC   | PPMC                      | Cowcod - Southern California                              | 3                       | Operational Stock Assessment | Y        |  |
| NWFSC / SWFSC   | PPMC                      | Darkblotched rockfish - Pacific Coast                     | 6                       | Stock Monitoring Analysis    | Y        | Not on initial Schedule                              |
| NWFSC / SWFSC   | PPMC                      | Dover sole - Pacific Coast                                | 6                       | Stock Monitoring Analysis    | Y        | Not on initial Schedule                              |
| NWFSC / SWFSC   | PPMC                      | Gopher rockfish - Northern California                     | 6                       | Operational Stock Assessment | Y        | Assessed as a complex with Black and yellow rockfish |
| NWFSC / SWFSC   | PPMC                      | Lingcod - Northern Pacific Coast                          | 6                       | Stock Monitoring Analysis    | Y        | Not on initial Schedule                              |
| NWFSC / SWFSC   | PPMC                      | Lingcod - Southern Pacific Coast                          | 6                       | Stock Monitoring Analysis    | Y        | Not on initial Schedule                              |
| NWFSC / SWFSC   | PPMC                      | Longnose skate - Pacific Coast                            | 6                       | Operational Stock Assessment | Y        |  |
| NWFSC / SWFSC   | PPMC                      | Longspine thornyhead - Pacific Coast                      | 6                       | Stock Monitoring Analysis    | Y        | Not on initial Schedule                              |
| NWFSC / SWFSC   | PPMC                      | Petrale sole - Pacific Coast                              | 6                       | Operational Stock Assessment | Y        | Delayed from Q3                                      |
| NWFSC / SWFSC   | PPMC                      | Sablefish - Pacific Coast                                 | 6                       | Operational Stock Assessment | Y        |  |
| NWFSC / SWFSC   | PPMC                      | Widow rockfish - Pacific Coast                            | 6                       | Operational Stock Assessment | Y        | Delayed from Q3                                      |
| PIFSC   | WPPMC                     | American Samoa Bottomfish Multi-species Complex           | 3                       | Operational Stock Assessment | Y        | Delayed from Q3                                      |
| PIFSC   | WPPMC                     | Guam Bottomfish Multi-species Complex                     | 3                       | Operational Stock Assessment | Y        | Delayed from Q3                                      |
| PIFSC   | WPPMC                     | Northern Mariana Islands Bottomfish Multi-species Complex | 3                       | Operational Stock Assessment | Y        | Delayed from Q3                                      |

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**Footnotes**

1 NOAA Fisheries Science Centers include Alaska Fisheries Science Center (AFSC), Northeast Fisheries Science Center (NEFSC), Northwest Fisheries Science Center (NWFSC), Pacific Islands Fisheries Science Center (PIFSC), Southeast Fisheries Science Center (SEFSC) and Southwest Fisheries Science Center (SWFSC). In some cases, assessments are conducted by multiple science centers (e.g. NW/SW and SW/PI).

2 Jurisdictions include Caribbean Fishery Management Council (CFMC), Gulf of Mexico Fishery Management Council (GMFMC), Atlantic Highly Migratory Species Division (HMS), Mid-Atlantic Fishery Management Council (MAFMC), New England Fishery Management Council (NEFMC), North Pacific Fishery Management Council (NPFMC), Pacific Fishery Management Council (PFMC), South Atlantic Fishery Management Council (SAFMC) and Western Pacific Fishery Management Council (WPFMC).

3 Assessment Model Category: Category of stock assessment model accepted for use in management, as described in the 2018 Next Generation Stock Assessment Improvement Plan document.

1 = Data-Limited (e.g. DBSRA, DCAC, Surplus Production MSY, Egg-Escapement, Mean Length Estimation)

2 = Index-Based (e.g. AIM, basic linear models and time series analyses)

3 = Aggregate Biomass Dynamics (e.g. Schaefer or Pella-Tomlinson Production Models, ASPIC, delay-difference models)

4 = Virtual Population Analysis (e.g. ADAPT, VPA-2BOX)

5 = Statistical Catch-at-Length (e.g. SCALE, SS, MultifanCL)

6 = Statistical Catch-at-Age (e.g. SS, ASAP, AMAK, BAM, MultifanCL, CASAL)

4 For FY19, the National Stock Assessment Program is adapting how it tracks and classifies its activities related to the provision of harvest recommendations. The changes reflect the guidance established in the 2018 Next Generation Stock Assessment Improvement Plan document.

Operational Stock Assessment - Activities labeled "Operational Stock Assessments" include analyses that utilize one or more of the categories of stock assessment models described in the "Model Class" field (Footnote 4). Within the range of Operational Stock Assessments will be first time applications of previously researched methods ("new" or "benchmark" assessments); applications with updated data streams and minor revisions to methods within the scope of previously researched themes; and applications that simply update the model with the most recent data.

Stock Monitoring Analysis - Activities labeled "Stock Monitoring Analyses" generally include activities that provide stock-level advice to fishery managers between stock assessments. These analyses include the methods described in the "Model Class" field (Footnote 3), but only when they are updated using the most recent catch information to develop new catch advice. These are sometimes called partial updates. Because there are no changes in the methods or data series in Stock Monitoring Analysis, just updated catch data, the conduct and review of these analyses does not warrant intense scrutiny.

\* Changes in the assessment schedule are indicated by red font.

## Appendix B. Assessment activity for non-FSSI stocks, stock complexes and complex members by quarter for FY2019.

### Completed Assessments for Non-FSSI Stocks - FY2019 Quarter 1 (October - December, 2018)

| Science Center(s) <sup>1</sup> | Jurisdiction <sup>2</sup> | Stock  | Model Class <sup>3</sup> | Asmt Type <sup>4</sup>       | Notes on Assessment         |
|--------------------------------|---------------------------|--|--------------------------|------------------------------|-----------------------------|
| AFSC                           | NPFMC                     | Bering Sea / Aleutian Islands Other Flatfish Complex | 3                        | Stock Monitoring Analysis    |                             |
| AFSC                           | NPFMC                     | Bering Sea / Aleutian Islands Other Rockfish Complex | 3                        | Operational Stock Assessment |                             |
| AFSC                           | NPFMC                     | Bering Sea / Aleutian Islands Other Skates Complex   | 3                        | Operational Stock Assessment |                             |
| AFSC                           | NPFMC                     | Giant octopus - Bering Sea / Aleutian Islands        | 1                        | Operational Stock Assessment |                             |
| AFSC                           | NPFMC                     | Gulf of Alaska Other Shallow Water Flatfish Complex  | 3                        | Stock Monitoring Analysis    |                             |
| AFSC                           | NPFMC                     | Gulf of Alaska Shark Complex                         | 3                        | Operational Stock Assessment |                             |
| AFSC                           | NPFMC                     | Kamchatka flounder - Bering Sea / Aleutian Islands   | 6                        | Operational Stock Assessment |                             |
| AFSC                           | NPFMC                     | Pacific cod - Aleutian Islands                       | 3                        | Operational Stock Assessment |                             |
| AFSC                           | NPFMC                     | Shortraker rockfish - Bering Sea / Aleutian Islands  | 3                        | Operational Stock Assessment |                             |
| AFSC                           | NPFMC                     | Walleye pollock - Bogoslof                           | 3                        | Operational Stock Assessment |                             |
| AFSC                           | NPFMC                     | Walleye pollock - Southeast Gulf of Alaska           | 3                        | Operational Stock Assessment |                             |
| SEFSC                          | HMS                       | Bigeye tuna - Atlantic                               | 6                        | Operational Stock Assessment | Not on the initial schedule |
| SEFSC                          | HMS                       | Blue marlin - Atlantic                               | 6                        | Operational Stock Assessment | Not on the initial schedule |

### Completed Assessments for Non-FSSI Stocks - FY2019 Quarter 2 (January - March, 2019)

| Science Center(s) <sup>1</sup> | Jurisdiction <sup>2</sup> | Stock   | Model Class <sup>3</sup> | Asmt Type <sup>4</sup>       | Notes on Assessment |
|--------------------------------|---------------------------|---|--------------------------|------------------------------|---------------------|
| INT                            | Non-Federal               | Pacific Halibut - Pacific Coast                                       | 6                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC                  | PFMC                      | Chinook salmon - California Central Valley: Sacramento River Spring   | 2                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC                  | PFMC                      | Chinook salmon - California Central Valley: Sacramento River Winter   | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC                  | PFMC                      | Chinook salmon - Columbia River Basin: Lower River Hatchery Fall      | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC                  | PFMC                      | Chinook salmon - Columbia River Basin: Lower River Hatchery Spring    | 2                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC                  | PFMC                      | Chinook salmon - Columbia River Basin: Mid-River Bright Hatchery Fall | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC                  | PFMC                      | Chinook salmon - Columbia River Basin: North Lewis River Fall         | 4                        | Operational Stock Assessment |                     |



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| Completed Assessments for Non-FSSI Stocks - FY2019 Quarter 2 (January - March, 2019) |                           |  |                          |                              |                     |
|--|---------------------------|--|--------------------------|------------------------------|---------------------|
| Science Center(s) <sup>1</sup>   | Jurisdiction <sup>2</sup> | Stock  | Model Class <sup>3</sup> | Asmt Type <sup>4</sup>       | Notes on Assessment |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Columbia River Basin: Snake River Fall                  | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Columbia River Basin: Snake River Spring/Summer         | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Columbia River Basin: Spring Creek Hatchery Fall        | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Columbia River Basin: Upper River Bright Fall           | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Columbia River Basin: Upper River Spring                | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Columbia River Basin: Upper River Summer                | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Columbia River Basin: Upper Willamette Spring           | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Northern California Coast: California Coastal           | 2                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Oregon Coast: Central and Northern Oregon               | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Oregon Coast: Southern Oregon                           | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Puget Sound: Cedar River Summer/Fall                    | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Puget Sound: Eastern Strait of Juan de Fuca Summer/Fall | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Puget Sound: Green River Summer/Fall                    | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Puget Sound: Mid Hood Canal Summer/Fall                 | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Puget Sound: Nisqually River Summer/Fall                | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Puget Sound: Nooksack Spring Early                      | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Puget Sound: Puyallup Summer/Fall                       | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Puget Sound: Skagit Spring                              | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Puget Sound: Skagit Summer/Fall                         | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Puget Sound: Skokomish Summer/Fall                      | 2                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Puget Sound: Snohomish Summer/Fall                      | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Puget Sound: Stillaguamish Summer/Fall                  | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Puget Sound: White River Spring                         | 3                        | Operational Stock Assessment |                     |

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| Completed Assessments for Non-FSSI Stocks - FY2019 Quarter 2 (January - March, 2019) |                           |   |                          |                              |                     |
|--|---------------------------|---|--------------------------|------------------------------|---------------------|
| Science Center(s) <sup>1</sup>   | Jurisdiction <sup>2</sup> | Stock   | Model Class <sup>3</sup> | Asmt Type <sup>4</sup>       | Notes on Assessment |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Washington Coast: Grays Harbor Fall                                  | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Washington Coast: Grays Harbor Spring                                | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Washington Coast: Hoh Fall   | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Washington Coast: Hoh Spring/Summer                                  | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Washington Coast: Hoko Summer/Fall                                   | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Washington Coast: Queets Fall  | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Washington Coast: Queets Spring/Summer                               | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Washington Coast: Quillayute Fall                                    | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Washington Coast: Quillayute Spring/Summer                           | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Washington Coast: Quinalt Fall Hatchery                              | 2                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Washington Coast: Willapa Bay Fall Hatchery                          | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Chinook salmon - Washington Coast: Willapa Bay Fall Natural                           | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Oregon Production Index Area: Central California Coast                  | 2                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Oregon Production Index Area: Columbia River Early Hatchery             | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Oregon Production Index Area: Columbia River Late Hatchery              | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Oregon Production Index Area: Lower Columbia Natural                    | 2                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Oregon Production Index Area: Oregon Coast Hatchery                     | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Oregon Production Index Area: Oregon Coast Natural                      | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Oregon Production Index Area: Southern Oregon/Northern California Coast | 2                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Puget Sound: Hood Canal   | 4                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Puget Sound: Skagit   | 3                        | Operational Stock Assessment |                     |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Puget Sound: Snohomish  | 3                        | Operational Stock Assessment |                     |

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| Completed Assessments for Non-FSSI Stocks - FY2019 Quarter 2 (January - March, 2019) |                           |  |                          |                              |                                      |
|--|---------------------------|--|--------------------------|------------------------------|--------------------------------------|
| Science Center(s) <sup>1</sup>   | Jurisdiction <sup>2</sup> | Stock  | Model Class <sup>3</sup> | Asmt Type <sup>4</sup>       | Notes on Assessment                  |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Puget Sound: South Puget Sound Hatchery      | 3                        | Operational Stock Assessment |                                      |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Puget Sound: Stillaguamish                   | 4                        | Operational Stock Assessment |                                      |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Washington Coast: Grays Harbor               | 3                        | Operational Stock Assessment |                                      |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Washington Coast: Hoh                        | 3                        | Operational Stock Assessment |                                      |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Washington Coast: Queets                     | 3                        | Operational Stock Assessment |                                      |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Washington Coast: Quillayute Fall            | 3                        | Operational Stock Assessment |                                      |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Washington Coast: Quillayute Summer Hatchery | 3                        | Operational Stock Assessment |                                      |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Washington Coast: Quinault Hatchery          | 2                        | Operational Stock Assessment |                                      |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Washington Coast: Strait of Juan de Fuca     | 3                        | Operational Stock Assessment |                                      |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Washington Coast: Willapa Bay Hatchery       | 3                        | Operational Stock Assessment |                                      |
| NWFSC / SWFSC  | PFMC                      | Coho salmon - Washington Coast: Willapa Bay Natural        | 3                        | Operational Stock Assessment |                                      |
| NWFSC / SWFSC  | PFMC                      | Pacific hake - Pacific Coast                               | 6                        | Operational Stock Assessment |                                      |
| NWFSC / SWFSC  | PFMC                      | Pink salmon - Puget Sound                                  | 4                        | Operational Stock Assessment |                                      |
| PIFSC  | WPFMC                     | Spanner crab - Main Hawaiian Islands                       | 3                        | Operational Stock Assessment |                                      |
| Completed Assessments for Non-FSSI Stocks - FY2019 Quarter 3 (April - June, 2019)    |                           |  |                          |                              |                                      |
| Science Center(s) <sup>1</sup>   | Jurisdiction <sup>2</sup> | Stock  | Model Class <sup>3</sup> | Asmt Type <sup>4</sup>       | Notes on Assessment                  |
| AFSC   | NPFMC                     | Weathervane scallop - Alaska                               | 2                        | Operational Stock Assessment |                                      |
| PIFSC  | WPFMC                     | Big-eye bream - Guam                                       | 1                        | Operational Stock Assessment | Guam Ecosystem Multi-species Complex |
| PIFSC  | WPFMC                     | Blacktail snapper - Guam                                   | 1                        | Operational Stock Assessment | Guam Ecosystem Multi-species Complex |
| PIFSC  | WPFMC                     | Bluefin trevally - Guam                                    | 1                        | Operational Stock Assessment | Guam Ecosystem Multi-species Complex |
| PIFSC  | WPFMC                     | Bluespine unicornfish - Guam                               | 1                        | Operational Stock Assessment | Guam Ecosystem Multi-species Complex |
| PIFSC  | WPFMC                     | Filament-finned parrotfish - Guam                          | 1                        | Operational Stock Assessment | Guam Ecosystem Multi-species Complex |
| PIFSC  | WPFMC                     | Humpback snapper - Guam                                    | 1                        | Operational Stock Assessment | Guam Ecosystem Multi-species Complex |

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| Completed Assessments for Non-FSSI Stocks - FY2019 Quarter 3 (April - June, 2019)     |                           |  |                          |                              |  |
|---|---------------------------|--|--------------------------|------------------------------|--|
| Science Center(s) <sup>1</sup>  | Jurisdiction <sup>2</sup> | Stock  | Model Class <sup>3</sup> | Asmt Type <sup>4</sup>       | Notes on Assessment                        |
| PIFSC   | WPFMC                     | Island jack - Guam                                   | 1                        | Operational Stock Assessment | Guam Ecosystem Multi-species Complex       |
| PIFSC   | WPFMC                     | Longface emperor - Guam                              | 1                        | Operational Stock Assessment | Guam Ecosystem Multi-species Complex       |
| PIFSC   | WPFMC                     | Pacific longnose parrotfish - Guam                   | 1                        | Operational Stock Assessment | Guam Ecosystem Multi-species Complex       |
| PIFSC   | WPFMC                     | Redlip parrotfish - Guam                             | 1                        | Operational Stock Assessment | Guam Ecosystem Multi-species Complex       |
| PIFSC   | WPFMC                     | Steephead parrotfish - Guam                          | 1                        | Operational Stock Assessment | Guam Ecosystem Multi-species Complex       |
| PIFSC   | WPFMC                     | Yellowlip emperor - Guam                             | 1                        | Operational Stock Assessment | Guam Ecosystem Multi-species Complex       |
| Completed Assessments for Non-FSSI Stocks - FY2019 Quarter 4 (July - September, 2019) |                           |  |                          |                              |  |
| Science Center(s) <sup>1</sup>  | Jurisdiction <sup>2</sup> | Stock  | Model Class <sup>3</sup> | Asmt Type <sup>4</sup>       | Notes on Assessment                        |
| AFSC  | NPFMC                     | Coho salmon - Auke Creek                             | 6                        | Operational Stock Assessment |  |
| AFSC  | NPFMC                     | Coho salmon - Berners River                          | 6                        | Operational Stock Assessment |  |
| AFSC  | NPFMC                     | Coho salmon - Hugh Smith Lake                        | 6                        | Operational Stock Assessment |  |
| NEFSC   | NEFMC                     | Atlantic salmon - Gulf of Maine                      | 2                        | Operational Stock Assessment | Initially listed as an FSSI stock in error |
| NWFSC / SWFSC   | PPMC                      | Big Skate - Pacific Coast                            | 6                        | Operational Stock Assessment |  |
| NWFSC / SWFSC   | PPMC                      | Cabazon - Oregon                                     | 6                        | Operational Stock Assessment | Not on initial Schedule                    |
| NWFSC / SWFSC   | PPMC                      | Cabazon - Washington                                 | 1                        | Operational Stock Assessment | Not on initial Schedule                    |
| NWFSC / SWFSC   | PPMC                      | China rockfish - Central Pacific Coast               | 6                        | Stock Monitoring Analysis    | Not on initial Schedule                    |
| NWFSC / SWFSC   | PPMC                      | China rockfish - Northern Pacific Coast              | 6                        | Stock Monitoring Analysis    | Not on initial Schedule                    |
| NWFSC / SWFSC   | PPMC                      | China rockfish - Southern Pacific Coast              | 6                        | Stock Monitoring Analysis    | Not on initial Schedule                    |
| PIFSC   | WPFMC                     | Oceanic whitetip shark - Western and Central Pacific | 6                        | Operational Stock Assessment |  |
| PIFSC   | WPFMC                     | Skipjack tuna - Western and Central Pacific          | 6                        | Operational Stock Assessment |  |
| PIFSC   | WPFMC                     | Striped marlin - Western and Central Pacific         | 6                        | Operational Stock Assessment |  |

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6 = Statistical Catch-at-Age (e.g. SS, ASAP, AMAK, BAM, MultifanCL, CASAL)

4 For FY19, the National Stock Assessment Program is adapting how it tracks and classifies its activities related to the provision of harvest recommendations. The changes reflect the guidance established in the 2018 Next Generation Stock Assessment Improvement Plan document.

Operational Stock Assessment - Activities labeled "Operational Stock Assessments" include analyses that utilize one or more of the categories of stock assessment models described in the "Model Class" field (Footnote 4). Within the range of Operational Stock Assessments will be first time applications of previously researched methods ("new" or "benchmark" assessments); applications with updated data streams and minor revisions to methods within the scope of previously researched themes; and applications that simply update the model with the most recent data.

Stock Monitoring Analysis - Activities labeled "Stock Monitoring Analyses" generally include activities that provide stock-level advice to fishery managers between stock assessments. These analyses include the methods described in the "Model Class" field (Footnote 3), but only when they are updated using the most recent catch information to develop new catch advice. These are sometimes called partial updates. Because there are no changes in the methods or data series in Stock Monitoring Analysis, just updated catch data, the conduct and review of these analyses does not warrant intense scrutiny.

\* Changes in the assessment schedule are indicated by red font.

**Appendix C. Planned assessments for FSSI and non-FSSI stocks for by quarter for FY 2019. Information is best available provided by NOAA Fisheries Science Centers and subject to change.**

**Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 1 (October - December, 2018)**

| Science Center(s) <sup>1</sup> | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock  | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup> | Notes        |
|--------------------------------|---------------------------|------------------------------|--|--------------------------|--------------------------------|--------------|
| AFSC                           | NPFMC                     | FSSI                         | Alaska plaice - Bering Sea / Aleutian Islands                            | 6                        | Stock Monitoring Analysis      |              |
| AFSC                           | NPFMC                     | FSSI                         | Alaska skate - Bering Sea / Aleutian Islands                             | 6                        | Operational Stock Assessment   |              |
| AFSC                           | NPFMC                     | FSSI                         | Arrowtooth flounder - Bering Sea / Aleutian Islands                      | 6                        | Operational Stock Assessment   | CIE Reviewed |
| AFSC                           | NPFMC                     | FSSI                         | Arrowtooth flounder - Gulf of Alaska                                     | 6                        | Stock Monitoring Analysis      |              |
| AFSC                           | NPFMC                     | FSSI                         | Atka mackerel - Bering Sea / Aleutian Islands                            | 6                        | Operational Stock Assessment   |              |
| AFSC                           | NPFMC                     | FSSI                         | Bering Sea / Aleutian Islands Blackspotted and Rougheye Rockfish Complex | 6                        | Operational Stock Assessment   |              |
| AFSC                           | NPFMC                     | Non-FSSI                     | Bering Sea / Aleutian Islands Other Flatfish Complex                     | 3                        | Stock Monitoring Analysis      |              |
| AFSC                           | NPFMC                     | Non-FSSI                     | Bering Sea / Aleutian Islands Other Rockfish Complex                     | 3                        | Operational Stock Assessment   |              |
| AFSC                           | NPFMC                     | Non-FSSI                     | Bering Sea / Aleutian Islands Other Skates Complex                       | 3                        | Operational Stock Assessment   |              |
| AFSC                           | NPFMC                     | FSSI                         | Blue king crab - Saint Matthew Island                                    | 5                        | Operational Stock Assessment   |              |
| AFSC                           | NPFMC                     | FSSI                         | Dover sole - Gulf of Alaska  | 6                        | Stock Monitoring Analysis      |              |
| AFSC                           | NPFMC                     | FSSI                         | Dusky rockfish - Gulf of Alaska  | 6                        | Operational Stock Assessment   |              |
| AFSC                           | NPFMC                     | FSSI                         | Flathead sole - Bering Sea / Aleutian Islands                            | 6                        | Operational Stock Assessment   |              |
| AFSC                           | NPFMC                     | FSSI                         | Flathead sole - Gulf of Alaska   | 6                        | Stock Monitoring Analysis      |              |



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| Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 1 (October - December, 2018) |                           |                              |   |                          |                                |       |
|---|---------------------------|------------------------------|---|--------------------------|--------------------------------|-------|
| Science Center(s) <sup>1</sup>  | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock   | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup> | Notes |
| AFSC  | NPFMC                     | Non-FSSI                     | Giant octopus - Bering Sea / Aleutian Islands             | 2                        | Operational Stock Assessment   |       |
| AFSC  | NPFMC                     | FSSI                         | Greenland halibut - Bering Sea / Aleutian Islands         | 6                        | Operational Stock Assessment   |       |
| AFSC  | NPFMC                     | FSSI                         | Gulf of Alaska Blackspotted and Rougheye Rockfish Complex | 6                        | Stock Monitoring Analysis      |       |
| AFSC  | NPFMC                     | Non-FSSI                     | Gulf of Alaska Other Shallow Water Flatfish Complex       | 3                        | Stock Monitoring Analysis      |       |
| AFSC  | NPFMC                     | Non-FSSI                     | Gulf of Alaska Shark Complex                              | 3                        | Operational Stock Assessment   |       |
| AFSC  | NPFMC                     | Non-FSSI                     | Kamchatka flounder - Bering Sea / Aleutian Islands        | 6                        | Operational Stock Assessment   |       |
| AFSC  | NPFMC                     | <b>FSSI</b>                  | Northern rock sole - Bering Sea / Aleutian Islands        | 6                        | Operational Stock Assessment   |       |
| AFSC  | NPFMC                     | <b>FSSI</b>                  | Northern rock sole - Gulf of Alaska                       | 6                        | Operational Stock Assessment   |       |
| AFSC  | NPFMC                     | FSSI                         | Northern rockfish - Bering Sea / Aleutian Islands         | 6                        | Stock Monitoring Analysis      |       |
| AFSC  | NPFMC                     | FSSI                         | Northern rockfish - Western / Central Gulf of Alaska      | 6                        | Operational Stock Assessment   |       |
| AFSC  | NPFMC                     | Non-FSSI                     | Pacific cod - Aleutian Islands                            | 3                        | Operational Stock Assessment   |       |
| AFSC  | NPFMC                     | FSSI                         | Pacific cod - Bering Sea                                  | 6                        | Operational Stock Assessment   |       |
| AFSC  | NPFMC                     | FSSI                         | Pacific cod - Gulf of Alaska                              | 6                        | Operational Stock Assessment   |       |
| AFSC  | NPFMC                     | FSSI                         | Pacific ocean perch - Bering Sea / Aleutian Islands       | 6                        | Operational Stock Assessment   |       |
| AFSC  | NPFMC                     | FSSI                         | Pacific ocean perch - Gulf of Alaska                      | 6                        | Stock Monitoring Analysis      |       |
| AFSC  | NPFMC                     | FSSI                         | Red king crab - Bristol Bay                               | 5                        | Operational Stock Assessment   |       |

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| Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 1 (October - December, 2018) |                           |                              |  |                          |                                     |                                |
|---|---------------------------|------------------------------|--|--------------------------|-------------------------------------|--------------------------------|
| Science Center(s) <sup>1</sup>  | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock  | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup>      | Notes                          |
| AFSC  | NPFMC                     | FSSI                         | Rex sole - Gulf of Alaska  | 6                        | Stock Monitoring Analysis           |                                |
| AFSC  | NPFMC                     | FSSI                         | Rock sole - Gulf of Alaska   | 6                        | Stock Monitoring Analysis           |                                |
| AFSC  | NPFMC                     | FSSI                         | Sablefish - Eastern Bering Sea / Aleutian Islands / Gulf of Alaska | 6                        | Operational Stock Assessment        |                                |
| AFSC  | NPFMC                     | Non-FSSI                     | Shortraker rockfish - Bering Sea / Aleutian Islands                | 3                        | Operational Stock Assessment        |                                |
| AFSC  | NPFMC                     | FSSI                         | Shortspine thornyhead - Gulf of Alaska                             | 3                        | Operational Stock Assessment        |                                |
| AFSC  | NPFMC                     | FSSI                         | Snow crab - Bering Sea   | 5                        | Operational Stock Assessment        |                                |
| AFSC  | NPFMC                     | FSSI                         | Southern Tanner crab - Bering Sea                                  | 5                        | Operational Stock Assessment        |                                |
| AFSC  | NPFMC                     | FSSI                         | Walleye pollock - Aleutian Islands                                 | 6                        | Operational Stock Assessment        |                                |
| AFSC  | NPFMC                     | Non-FSSI                     | Walleye pollock - Bogoslof   | 3                        | Operational Stock Assessment        |                                |
| AFSC  | NPFMC                     | FSSI                         | Walleye pollock - Eastern Bering Sea                               | 6                        | Operational Stock Assessment        |                                |
| AFSC  | NPFMC                     | Non-FSSI                     | Walleye pollock - Southeast Gulf of Alaska                         | 3                        | Operational Stock Assessment        |                                |
| AFSC  | NPFMC                     | FSSI                         | Walleye pollock - Western / Central Gulf of Alaska                 | 6                        | Operational Stock Assessment        |                                |
| AFSC  | NPFMC                     | FSSI                         | Yelloweye rockfish - Gulf of Alaska                                | 3                        | Operational Stock Assessment        |                                |
| AFSC  | NPFMC                     | FSSI                         | Yellowfin sole - Bering Sea / Aleutian Islands                     | 6                        | Operational Stock Assessment        |                                |
| <b>SEFSC</b>  | <b>HMS</b>                | <b>Non-FSSI</b>              | <b>Bigeye tuna - Atlantic</b>                                      | <b>6</b>                 | <b>Operational Stock Assessment</b> | <b>Not on initial Schedule</b> |
| SEFSC   | HMS                       | FSSI                         | Blacktip shark - Gulf of Mexico                                    | 6                        | Operational Stock Assessment        | Delayed from FY18              |

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| Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 2 (January - March, 2019) |                           |                              |   |                          |   |                          |
|--|---------------------------|------------------------------|---|--------------------------|---|--------------------------|
| Science Center(s) <sup>1</sup>   | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock   | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup>          | Notes                    |
| SEFSC  | HMS                       | Non-FSSI                     | Blue marlin - Atlantic  | 6                        | Operational Stock Assessment            | Not on initial Schedule  |
| SEFSC  | SAFMC                     | FSSI                         | <del>Greater amberjack - Southern Atlantic Coast</del>                | 6                        | <del>Operational Stock Assessment</del> | Delayed to Quarter Three |
| INT  | Non-Federal               | Non-FSSI                     | Pacific Halibut - Pacific Coast                                       | 6                        | Operational Stock Assessment            |                          |
| AFSC   | NPFMC                     | FSSI                         | Red king crab - Norton Sound  | 5                        | Operational Stock Assessment            | Not on initial Schedule  |
| NEFSC  | MAFMC                     | FSSI                         | Summer flounder - Mid-Atlantic Coast                                  | 6                        | Operational Stock Assessment            | CIE Reviewed             |
| NWFSC / SWFSC  | PFMC                      | FSSI                         | Chinook salmon - California Central Valley: Sacramento River Fall     | 3                        | Operational Stock Assessment            |                          |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - California Central Valley: Sacramento River Spring   | 2                        | Operational Stock Assessment            |                          |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - California Central Valley: Sacramento River Winter   | 4                        | Operational Stock Assessment            |                          |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Columbia River Basin: Lower River Hatchery Fall      | 4                        | Operational Stock Assessment            |                          |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Columbia River Basin: Lower River Hatchery Spring    | 2                        | Operational Stock Assessment            |                          |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Columbia River Basin: Mid-River Bright Hatchery Fall | 4                        | Operational Stock Assessment            |                          |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Columbia River Basin: North Lewis River Fall         | 4                        | Operational Stock Assessment            |                          |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Columbia River Basin: Snake River Fall               | 4                        | Operational Stock Assessment            |                          |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Columbia River Basin: Snake River Spring/Summer      | 4                        | Operational Stock Assessment            |                          |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Columbia River Basin: Spring Creek Hatchery Fall     | 4                        | Operational Stock Assessment            |                          |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Columbia River Basin: Upper River Bright Fall        | 4                        | Operational Stock Assessment            |                          |

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| Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 2 (January - March, 2019) |                           |                              |  |                          |                                |       |
|--|---------------------------|------------------------------|--|--------------------------|--------------------------------|-------|
| Science Center(s) <sup>1</sup>   | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock  | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup> | Notes |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Columbia River Basin: Upper River Spring                | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Columbia River Basin: Upper River Summer                | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Columbia River Basin: Upper Willamette Spring           | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Northern California Coast: California Coastal           | 2                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | FSSI                         | Chinook salmon - Northern California Coast: Klamath River Fall           | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Oregon Coast: Central and Northern Oregon               | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Oregon Coast: Southern Oregon                           | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Puget Sound: Cedar River Summer/Fall                    | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Puget Sound: Eastern Strait of Juan de Fuca Summer/Fall | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Puget Sound: Green River Summer/Fall                    | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Puget Sound: Mid Hood Canal Summer/Fall                 | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Puget Sound: Nisqually River Summer/Fall                | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Puget Sound: Nooksack Spring Early                      | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Puget Sound: Puyallup Summer/Fall                       | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Puget Sound: Skagit Spring                              | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Puget Sound: Skagit Summer/Fall                         | 4                        | Operational Stock Assessment   |       |

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| Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 2 (January - March, 2019) |                           |                              |  |                          |                                |       |
|--|---------------------------|------------------------------|--|--------------------------|--------------------------------|-------|
| Science Center(s) <sup>1</sup>   | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock  | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup> | Notes |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Puget Sound: Skokomish Summer/Fall          | 2                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Puget Sound: Snohomish Summer/Fall          | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Puget Sound: Stillaguamish Summer/Fall      | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Puget Sound: White River Spring             | 3                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Washington Coast: Grays Harbor Fall         | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Washington Coast: Grays Harbor Spring       | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Washington Coast: Hoh Fall                  | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Washington Coast: Hoh Spring/Summer         | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Washington Coast: Hoko Summer/Fall          | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Washington Coast: Queets Fall               | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Washington Coast: Queets Spring/Summer      | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Washington Coast: Quillayute Fall           | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Washington Coast: Quillayute Spring/Summer  | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Washington Coast: Quinault Fall Hatchery    | 2                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Washington Coast: Willapa Bay Fall Hatchery | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Chinook salmon - Washington Coast: Willapa Bay Fall Natural  | 4                        | Operational Stock Assessment   |       |

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| Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 2 (January - March, 2019) |                           |                              |   |                          |                                |       |
|--|---------------------------|------------------------------|---|--------------------------|--------------------------------|-------|
| Science Center(s) <sup>1</sup>   | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock   | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup> | Notes |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Oregon Production Index Area: Central California Coast                  | 2                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Oregon Production Index Area: Columbia River Early Hatchery             | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Oregon Production Index Area: Columbia River Late Hatchery              | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Oregon Production Index Area: Lower Columbia Natural                    | 2                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Oregon Production Index Area: Oregon Coast Hatchery                     | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Oregon Production Index Area: Oregon Coast Natural                      | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Oregon Production Index Area: Southern Oregon/Northern California Coast | 2                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Puget Sound: Hood Canal   | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Puget Sound: Skagit   | 3                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Puget Sound: Snohomish  | 3                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Puget Sound: South Puget Sound Hatchery                                 | 3                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Puget Sound: Stillaguamish  | 4                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Washington Coast: Grays Harbor  | 3                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Washington Coast: Hoh   | 3                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Washington Coast: Queets  | 3                        | Operational Stock Assessment   |       |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Washington Coast: Quillayute Fall                                       | 3                        | Operational Stock Assessment   |       |



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| Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 2 (January - March, 2019) |                           |                              |  |                          |   |                                  |
|--|---------------------------|------------------------------|--|--------------------------|---|----------------------------------|
| Science Center(s) <sup>1</sup>   | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock  | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup>          | Notes                            |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Washington Coast: Quillayute Summer Hatchery | 3                        | Operational Stock Assessment            |                                  |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Washington Coast: Quinalt Hatchery           | 2                        | Operational Stock Assessment            |                                  |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Washington Coast: Strait of Juan de Fuca     | 3                        | Operational Stock Assessment            |                                  |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Washington Coast: Willapa Bay Hatchery       | 3                        | Operational Stock Assessment            |                                  |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Coho salmon - Washington Coast: Willapa Bay Natural        | 3                        | Operational Stock Assessment            |                                  |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Pacific hake - Pacific Coast                               | 6                        | Operational Stock Assessment            |                                  |
| NWFSC / SWFSC  | PFMC                      | Non-FSSI                     | Pink salmon - Puget Sound                                  | 4                        | Operational Stock Assessment            |                                  |
| PIFSC  | WPFMC                     | Non-FSSI                     | Spanner crab - Main Hawaiian Islands                       | 3                        | Operational Stock Assessment            | Delayed from FY18                |
| <del>SEFSC</del>   | <del>CFMC</del>           | <del>FSSI</del>              | <del>Caribbean spiny lobster—Puerto Rico</del>             | 2                        | <del>Operational Stock Assessment</del> | Delayed to Q4                    |
| <del>SEFSC</del>   | <del>CFMC</del>           | <del>FSSI</del>              | <del>Caribbean spiny lobster—St. Croix</del>               | 2                        | <del>Operational Stock Assessment</del> | Delayed to Q4                    |
| <del>SEFSC</del>   | <del>CFMC</del>           | <del>FSSI</del>              | <del>Caribbean spiny lobster—St. Thomas / St. John</del>   | 2                        | <del>Operational Stock Assessment</del> | Delayed to Q4                    |
| SEFSC  | GMFMC                     | FSSI                         | Brown shrimp - Gulf of Mexico                              | 5                        | Operational Stock Assessment            |                                  |
| <del>SEFSC</del>   | <del>GMFMC</del>          | <del>FSSI</del>              | <del>Gray Triggerfish—Gulf of Mexico</del>                 | 6                        | <del>Operational Stock Assessment</del> | Delayed to FY20                  |
| SEFSC  | GMFMC                     | FSSI                         | Pink shrimp - Gulf of Mexico                               | 5                        | Operational Stock Assessment            |                                  |
| <del>SEFSC</del>   | <del>GMFMC</del>          | <del>FSSI</del>              | <del>Red grouper—Gulf of Mexico</del>                      | 6                        | <del>Operational Stock Assessment</del> | Delayed to Q4                    |
| <del>SEFSC</del>   | <del>GMFMC</del>          | <del>FSSI</del>              | <del>Royal red shrimp—Gulf of Mexico</del>                 | 2                        | <del>Operational Stock Assessment</del> | Assessment not conducted in FY19 |

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| Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 2 (January - March, 2019) |                           |                              |  |                          |   |                                  |
|--|---------------------------|------------------------------|--|--------------------------|---|----------------------------------|
| Science Center(s) <sup>1</sup>   | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock  | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup>          | Notes                            |
| SEFSC  | GMFMC                     | FSSI                         | White shrimp - Gulf of Mexico                              | 5                        | Operational Stock Assessment            |                                  |
| <del>SEFSC</del>   | <del>SAFMC</del>          | <del>FSSI</del>              | <del>Brown rock shrimp—Southern Atlantic Coast</del>       | <del>2</del>             | <del>Operational Stock Assessment</del> | Assessment not conducted in FY19 |
| <del>SEFSC</del>   | <del>SAFMC</del>          | <del>FSSI</del>              | <del>Brown shrimp—Southern Atlantic Coast</del>            | <del>2</del>             | <del>Operational Stock Assessment</del> | Assessment not conducted in FY19 |
| <del>SEFSC</del>   | <del>SAFMC</del>          | <del>FSSI</del>              | <del>Pink shrimp—Southern Atlantic Coast</del>             | <del>2</del>             | <del>Operational Stock Assessment</del> | Assessment not conducted in FY19 |
| <del>SEFSC</del>   | <del>SAFMC</del>          | <del>FSSI</del>              | <del>Red porgy—Southern Atlantic Coast</del>               | <del>6</del>             | <del>Operational Stock Assessment</del> | Delayed to FY20                  |
| <del>SEFSC</del>   | <del>SAFMC</del>          | <del>FSSI</del>              | <del>White shrimp—Southern Atlantic Coast</del>            | <del>2</del>             | <del>Operational Stock Assessment</del> | Assessment not conducted in FY19 |
| Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 3 (April - June, 2019)    |                           |                              |  |                          |   |                                  |
| Science Center(s) <sup>1</sup>   | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock  | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup>          | Notes                            |
| AFSC   | NPFMC                     | FSSI                         | Blue king crab - Pribilof Islands                          | 2                        | Operational Stock Assessment            |                                  |
| <del>AFSC</del>  | <del>NPFMC</del>          | <del>FSSI</del>              | <del>Golden king crab - Eastern Aleutian Islands</del>     | <del>5</del>             | <del>Operational Stock Assessment</del> | Not on initial Schedule          |
| <del>AFSC</del>  | <del>NPFMC</del>          | <del>FSSI</del>              | <del>Golden king crab - Western Aleutian Islands</del>     | <del>5</del>             | <del>Operational Stock Assessment</del> | Not on initial Schedule          |
| AFSC   | NPFMC                     | Non-FSSI                     | Weathervane scallop - Alaska                               | 2                        | Operational Stock Assessment            |                                  |
| <del>NWFSC / SWFSC</del>   | <del>PFMC</del>           | <del>FSSI</del>              | <del>Gabazon—Southern Pacific Coast</del>                  | <del>6</del>             | <del>Operational Stock Assessment</del> | Delayed to Q4                    |
| <del>NWFSC / SWFSC</del>   | <del>PFMC</del>           | <del>FSSI</del>              | <del>Petrale sole—Pacific Coast</del>                      | <del>6</del>             | <del>Operational Stock Assessment</del> | Delayed to Q4                    |
| <del>NWFSC / SWFSC</del>   | <del>PFMC</del>           | <del>FSSI</del>              | <del>Widow rockfish—Pacific Coast</del>                    | <del>6</del>             | <del>Operational Stock Assessment</del> | Delayed to Q4                    |
| <del>SEFSC</del>   | <del>SAFMC</del>          | <del>FSSI</del>              | <del>Greater Amberjack—Southern Atlantic Coast</del>       | <del>6</del>             | <del>Operational Stock Assessment</del> | Delayed to FY20                  |
| <del>PIFSC</del>   | <del>WPFMC</del>          | <del>FSSI</del>              | <del>American Samoa Bottomfish Multi-species Complex</del> | <del>3</del>             | <del>Operational Stock Assessment</del> | Delayed to Q4                    |

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| Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 3 (April - June, 2019) |                           |                              |  |                          |   |                                     |
|---|---------------------------|------------------------------|--|--------------------------|---|-------------------------------------|
| Science Center(s) <sup>1</sup>  | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock  | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup>          | Notes                               |
| PIFSC   | WPFMC                     | Non-FSSI                     | Big-eye breem - Guam   | 1                        | Operational Stock Assessment            | Guam Ecosystem Mult-species Complex |
| PIFSC   | WPFMC                     | Non-FSSI                     | Blacktail snapper - Guam   | 1                        | Operational Stock Assessment            | Guam Ecosystem Mult-species Complex |
| PIFSC   | WPFMC                     | Non-FSSI                     | Bluefin trevally - Guam  | 1                        | Operational Stock Assessment            | Guam Ecosystem Mult-species Complex |
| PIFSC   | WPFMC                     | Non-FSSI                     | Bluespine unicornfish - Guam   | 1                        | Operational Stock Assessment            | Guam Ecosystem Mult-species Complex |
| PIFSC   | WPFMC                     | Non-FSSI                     | Filament-finned parrotfish - Guam                                    | 1                        | Operational Stock Assessment            | Guam Ecosystem Mult-species Complex |
| <del>PIFSC</del>  | <del>WPFMC</del>          | <del>FSSI</del>              | <del>Guam Bottomfish Multi-species Complex</del>                     | <del>3</del>             | <del>Operational Stock Assessment</del> | Delayed to Q4                       |
| PIFSC   | WPFMC                     | Non-FSSI                     | Humpback snapper - Guam  | 1                        | Operational Stock Assessment            | Guam Ecosystem Mult-species Complex |
| PIFSC   | WPFMC                     | Non-FSSI                     | Island jack - Guam   | 1                        | Operational Stock Assessment            | Guam Ecosystem Mult-species Complex |
| PIFSC   | WPFMC                     | Non-FSSI                     | Longface emperor - Guam  | 1                        | Operational Stock Assessment            | Guam Ecosystem Mult-species Complex |
| <del>PIFSC</del>  | <del>WPFMC</del>          | <del>FSSI</del>              | <del>Northern Mariana Islands Bottomfish Multi-species Complex</del> | <del>3</del>             | <del>Operational Stock Assessment</del> | Delayed to Q4                       |
| PIFSC   | WPFMC                     | Non-FSSI                     | Pacific longnose parrotfish - Guam                                   | 1                        | Operational Stock Assessment            | Guam Ecosystem Mult-species Complex |
| PIFSC   | WPFMC                     | Non-FSSI                     | Redlip parrotfish - Guam   | 1                        | Operational Stock Assessment            | Guam Ecosystem Mult-species Complex |
| PIFSC   | WPFMC                     | Non-FSSI                     | Steephead parrotfish - Guam  | 1                        | Operational Stock Assessment            | Guam Ecosystem Mult-species Complex |
| PIFSC   | WPFMC                     | Non-FSSI                     | Yellowlip emperor - Guam   | 1                        | Operational Stock Assessment            | Guam Ecosystem Mult-species Complex |
| SWFSC   | PFMC                      | FSSI                         | Pacific chub mackerel - Pacific                                      | 6                        | Operational Stock Assessment            |                                     |
| SWFSC   | PFMC                      | FSSI                         | Pacific sardine - Pacific  | 6                        | Operational Stock Assessment            |                                     |

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| Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 4 (July - September, 2019) |                           |                              |  |                          |                                     |   |
|---|---------------------------|------------------------------|--|--------------------------|-------------------------------------|---|
| Science Center(s) <sup>1</sup>  | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock  | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup>      | Notes   |
| AFSC  | NPFMC                     | Non-FSSI                     | Chinook salmon - Eastern North Pacific Far North Migrating   | 6                        | Operational Stock Assessment        |   |
| AFSC  | NPFMC                     | Non-FSSI                     | Coho salmon - Auke Creek                                     | 6                        | Operational Stock Assessment        |   |
| AFSC  | NPFMC                     | Non-FSSI                     | Coho salmon - Berners River                                  | 6                        | Operational Stock Assessment        |   |
| AFSC  | NPFMC                     | Non-FSSI                     | Coho salmon - Hugh Smith Lake                                | 6                        | Operational Stock Assessment        |   |
| NEFSC   | MAFMC                     | FSSI                         | Black sea bass - Mid-Atlantic Coast                          | 6                        | Operational Stock Assessment        |   |
| NEFSC   | MAFMC                     | FSSI                         | Bluefish - Atlantic Coast                                    | 6                        | Operational Stock Assessment        |   |
| NEFSC   | MAFMC                     | FSSI                         | Scup - Atlantic Coast  | 6                        | Operational Stock Assessment        |   |
| NEFSC   | NEFMC                     | <b>FSSI</b>                  | Atlantic cod - Eastern Georges Bank                          | 4                        | Operational Stock Assessment        | <b>Does not count towards adequacy</b>            |
| NEFSC   | NEFMC                     | <b>Non-FSSI</b>              | Atlantic salmon - Gulf of Maine                              | <b>2</b>                 | Operational Stock Assessment        | <b>Initially listed as an FSSI stock in error</b> |
| <b>NEFSC</b>  | <b>NEFMC</b>              | <b>FSSI</b>                  | <b>Barndoor skate - Georges Bank / Southern New England</b>  | <b>2</b>                 | <b>Operational Stock Assessment</b> | <b>Not on initial Schedule</b>                    |
| <b>NEFSC</b>  | <b>NEFMC</b>              | <b>FSSI</b>                  | <b>Clearnose skate - Georges Bank / Southern New England</b> | <b>2</b>                 | <b>Operational Stock Assessment</b> | <b>Not on initial Schedule</b>                    |
| NEFSC   | NEFMC                     | FSSI                         | Haddock - Eastern Georges Bank                               | 4                        | Operational Stock Assessment        | <b>Does not count towards adequacy</b>            |
| <b>NEFSC</b>  | <b>NEFMC</b>              | <b>FSSI</b>                  | <b>Little skate - Georges Bank / Southern New England</b>    | <b>2</b>                 | <b>Operational Stock Assessment</b> | <b>Not on initial Schedule</b>                    |
| <b>NEFSC</b>  | <b>NEFMC</b>              | <b>FSSI</b>                  | <b>Rosette skate - Georges Bank / Southern New England</b>   | <b>2</b>                 | <b>Operational Stock Assessment</b> | <b>Not on initial Schedule</b>                    |
| <b>NEFSC</b>  | <b>NEFMC</b>              | <b>FSSI</b>                  | <b>Smooth skate - Georges Bank / Southern New England</b>    | <b>2</b>                 | <b>Operational Stock Assessment</b> | <b>Not on initial Schedule</b>                    |
| <b>NEFSC</b>  | <b>NEFMC</b>              | <b>FSSI</b>                  | <b>Thorny skate - Georges Bank / Southern New England</b>    | <b>2</b>                 | <b>Operational Stock Assessment</b> | <b>Not on initial Schedule</b>                    |

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| Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 4 (July - September, 2019) |                           |                              |  |                          |                                |                         |
|---|---------------------------|------------------------------|--|--------------------------|--------------------------------|-------------------------|
| Science Center(s) <sup>1</sup>  | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock  | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup> | Notes                   |
| NEFSC   | NEFMC                     | FSSI                         | Winter skate - Georges Bank / Southern New England | 2                        | Operational Stock Assessment   | Not on initial Schedule |
| NEFSC   | NEFMC                     | FSSI                         | Yellowtail flounder - Georges Bank                 | 2                        | Operational Stock Assessment   |                         |
| NEFSC   | NEFMC / MAFMC             | FSSI                         | Goosefish - Gulf of Maine / Northern Georges Bank  | 2                        | Operational Stock Assessment   | Not on initial Schedule |
| NEFSC   | NEFMC / MAFMC             | FSSI                         | Goosefish - Southern Georges Bank / Mid-Atlantic   | 2                        | Operational Stock Assessment   | Not on initial Schedule |
| NWFSC / SWFSC   | PFMC                      | Non-FSSI                     | Big Skate - Pacific Coast                          | 6                        | Operational Stock Assessment   |                         |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Black rockfish - California                        | 6                        | Stock Monitoring Analysis      | Not on initial Schedule |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Black rockfish - Oregon                            | 6                        | Stock Monitoring Analysis      | Not on initial Schedule |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Black rockfish -Washington                         | 6                        | Stock Monitoring Analysis      | Not on initial Schedule |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Blackgill rockfish - Southern California           | 6                        | Stock Monitoring Analysis      | Not on initial Schedule |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Blackspotted and Rougheye Rockfish Complex         | 6                        | Stock Monitoring Analysis      | Not on initial Schedule |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | California Blue and Deacon Rockfish Complex        | 6                        | Stock Monitoring Analysis      | Not on initial Schedule |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Cabazon - Northern California                      | 6                        | Operational Stock Assessment   | Delayed from Q3         |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Cabazon - Southern California                      | 6                        | Operational Stock Assessment   | Delayed from Q3         |
| NWFSC / SWFSC   | PFMC                      | Non-FSSI                     | Cabazon - Oregon                                   | 6                        | Operational Stock Assessment   | Not on initial Schedule |
| NWFSC / SWFSC   | PFMC                      | Non-FSSI                     | Cabazon - Washington                               | 1                        | Operational Stock Assessment   | Not on initial Schedule |
| NWFSC / SWFSC   | PFMC                      | Non-FSSI                     | China rockfish - Central Pacific Coast             | 6                        | Stock Monitoring Analysis      | Not on initial Schedule |

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| Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 4 (July - September, 2019) |                           |                              |   |                          |                                |  |
|---|---------------------------|------------------------------|---|--------------------------|--------------------------------|--|
| Science Center(s) <sup>1</sup>  | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock   | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup> | Notes  |
| NWFSC / SWFSC   | PFMC                      | Non-FSSI                     | China rockfish - Northern Pacific Coast         | 6                        | Stock Monitoring Analysis      | Not on initial Schedule  |
| NWFSC / SWFSC   | PFMC                      | Non-FSSI                     | China rockfish - Southern Pacific Coast         | 6                        | Stock Monitoring Analysis      | Not on initial Schedule  |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Cowcod - Southern California                    | 3                        | Operational Stock Assessment   |  |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Darkblotched rockfish - Pacific Coast           | 6                        | Stock Monitoring Analysis      | Not on initial Schedule  |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Dover sole - Pacific Coast                      | 6                        | Stock Monitoring Analysis      | Not on initial Schedule  |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Gopher rockfish - Northern California           | 6                        | Operational Stock Assessment   | Combined with Black and yellow rockfish data and assessed as a complex |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Lingcod - Northern Pacific Coast                | 6                        | Stock Monitoring Analysis      | Not on initial Schedule  |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Lingcod - Southern Pacific Coast                | 6                        | Stock Monitoring Analysis      | Not on initial Schedule  |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Longnose skate - Pacific Coast                  | 6                        | Operational Stock Assessment   | Initially listed as non-FSSI in error                                  |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Longspine thornyhead - Pacific Coast            | 6                        | Stock Monitoring Analysis      | Not on initial Schedule  |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Petrale sole - Pacific Coast                    | 6                        | Operational Stock Assessment   | Delayed from Q3  |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Sablefish - Pacific Coast                       | 6                        | Operational Stock Assessment   |  |
| NWFSC / SWFSC   | PFMC                      | FSSI                         | Widow rockfish - Pacific Coast                  | 6                        | Operational Stock Assessment   | Delayed from Q3  |
| PIFSC   | WPFMC                     | FSSI                         | American Samoa Bottomfish Multi-species Complex | 3                        | Operational Stock Assessment   | Delayed from Q3  |
| PIFSC   | WPFMC                     | FSSI                         | Guam Bottomfish Multi-species Complex           | 3                        | Operational Stock Assessment   | Delayed from Q3  |



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| Planned Assessments for FSSI and Non-FSSI Stocks - FY 2019 Quarter 4 (July - September, 2019) |                           |                              |  |                          |   |                              |
|---|---------------------------|------------------------------|--|--------------------------|---|------------------------------|
| Science Center(s) <sup>1</sup>  | Jurisdiction <sup>2</sup> | FSSI / Non-FSSI <sup>3</sup> | Stock  | Model Class <sup>4</sup> | Planned Asmt Type <sup>5</sup>          | Notes                        |
| PIFSC   | WPFMC                     | FSSI                         | Northern Mariana Islands Bottomfish Multi-species Complex  | 3                        | Operational Stock Assessment            | Delayed from Q3              |
| PIFSC   | WPFMC                     | Non-FSSI                     | Oceanic whitetip shark - Western and Central Pacific       | 6                        | Operational Stock Assessment            |                              |
| PIFSC   | WPFMC                     | Non-FSSI                     | Skipjack tuna - Western and Central Pacific                | 6                        | Operational Stock Assessment            |                              |
| PIFSC   | WPFMC                     | Non-FSSI                     | Striped marlin - Western and Central Pacific               | 6                        | Operational Stock Assessment            |                              |
| SEFSC   | HMS                       | Non-FSSI                     | <del>Skipjack tuna - Western Atlantic</del>                | 6                        | <del>Operational Stock Assessment</del> | Assessment was not conducted |
| SEFSC   | HMS                       | Non-FSSI                     | <del>White marlin - Atlantic</del>                         | 6                        | <del>Operational Stock Assessment</del> | Delayed to FY 20             |
| SEFSC   | HMS                       | Non-FSSI                     | <del>Yellowfin tuna - Western Atlantic</del>               | 6                        | <del>Operational Stock Assessment</del> | Delayed to FY 20             |
| SEFSC   | CFMC                      | FSSI                         | <del>Caribbean spiny lobster - Puerto Rico</del>           | 2                        | <del>Operational Stock Assessment</del> | Delayed to FY20              |
| SEFSC   | CFMC                      | FSSI                         | <del>Caribbean spiny lobster - St. Croix</del>             | 2                        | <del>Operational Stock Assessment</del> | Delayed to FY20              |
| SEFSC   | CFMC                      | FSSI                         | <del>Caribbean spiny lobster - St. Thomas / St. John</del> | 2                        | <del>Operational Stock Assessment</del> | Delayed to FY20              |
| SEFSC   | GMFMC                     | FSSI                         | <del>Red grouper - Gulf of Mexico</del>                    | 6                        | <del>Operational Stock Assessment</del> | Delayed to FY20              |

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**Footnotes**

1 NOAA Fisheries Science Centers include Alaska Fisheries Science Center (AFSC), Northeast Fisheries Science Center (NEFSC), Northwest Fisheries Science Center (NWFSC), Pacific Islands Fisheries Science Center (PIFSC), Southeast Fisheries Science Center (SEFSC) and Southwest Fisheries Science Center (SWFSC). In some cases, assessments are conducted by multiple science centers (e.g. NW/SW and SW/PI).

2 Jurisdictions include Caribbean Fishery Management Council (CFMC), Gulf of Mexico Fishery Management Council (GMFMC), Atlantic Highly Migratory Species Division (HMS), Mid-Atlantic Fishery Management Council (MAFMC), New England Fishery Management Council (NEFMC), North Pacific Fishery Management Council (NPFMC), Pacific Fishery Management Council (PFMC), South Atlantic Fishery Management Council (SAFMC) and Western Pacific Fishery Management Council (WPFMC).

3 FSSI refers to federally managed stocks and stock complexes included on the Fish Stock Sustainability Index. Non-FSSI refers to federally managed stocks and stock complexes not included on the Fish Stock Sustainability Index. INT refers to international stocks.

4 Assessment Model Category: Category of stock assessment model accepted for use in management, as described in the 2018 Next Generation Stock Assessment Improvement Plan document.

1 = Data-Limited (e.g. DBSRA, DCAC, Surplus Production MSY, Egg-Escapement, Mean Length Estimation)

2 = Index-Based (e.g. AIM, basic linear models and time series analyses)

3 = Aggregate Biomass Dynamics (e.g. Schaefer or Pella-Tomlinson Production Models, ASPIC, delay-difference models)

4 = Virtual Population Analysis (e.g. ADAPT, VPA-2BOX)

5 = Statistical Catch-at-Length (e.g. SCALE, SS, MultifanCL)

6 = Statistical Catch-at-Age (e.g. SS, ASAP, AMAK, BAM, MultifanCL, CASAL)

5 For FY19, the National Stock Assessment Program is adapting how it tracks and classifies its activities related to the provision of harvest recommendations. The changes reflect the guidance established in the 2018 Next Generation Stock Assessment Improvement Plan document. Operational Stock Assessment - Activities labeled "Operational Stock Assessments" include analyses that utilize one or more of the categories of stock assessment models described in the "Model Class" field (Footnote 4). Within the range of Operational Stock Assessments will be first time applications of previously researched methods ("new" or "benchmark" assessments); applications with updated data streams and minor revisions to methods within the scope of previously researched themes; and applications that simply update the model with the most recent data. Stock Monitoring Analysis - Activities labeled "Stock Monitoring Analyses" generally include activities that provide stock-level advice to fishery managers between stock assessments. These analyses include the methods described in the "Model Class" field (Footnote 4), but only when they are updated using the most recent catch information to develop new catch advice. These are sometimes called partial updates. Because there are no changes in the methods or data series in stock monitoring updates, just updated catch data, the conduct and review of these analyses does not warrant intense scrutiny.

\* Changes in the assessment schedule are indicated by red font.

**Appendix D. Assessment status for FSSI stocks and stock complexes at the end of FY2019. Changes in assessment information relative to the previous fish assessment quarterly report are highlighted with red text. For more information, please see Stock SMART - <https://www.st.nmfs.noaa.gov/StockSMART>.**

| Science Center(s) <sup>1</sup> | Jurisdiction <sup>2</sup> | Stock  | Last Assessment |                          |                              |           | Assessment Notes   |
|--------------------------------|---------------------------|--|-----------------|--------------------------|------------------------------|-----------|--|
|                                |                           |  | Fiscal Year     | Model Class <sup>3</sup> | Type                         | Adequate? |  |
| AFSC                           | NPFMC                     | Alaska plaice - Bering Sea / Aleutian Islands                            | 2019            | 6                        | Stock Monitoring Update      | Yes       |  |
| AFSC                           | NPFMC                     | Arrowtooth flounder - Bering Sea / Aleutian Islands                      | 2019            | 6                        | Operational Stock Assessment | Yes       |  |
| AFSC                           | NPFMC                     | Arrowtooth flounder - Gulf of Alaska                                     | 2019            | 6                        | Stock Monitoring Update      | Yes       |  |
| AFSC                           | NPFMC                     | Atka mackerel - Bering Sea / Aleutian Islands                            | 2019            | 6                        | Operational Stock Assessment | Yes       |  |
| AFSC                           | NPFMC                     | Bering Sea / Aleutian Islands Blackspotted and Rougheye Rockfish Complex | 2019            | 6                        | Operational Stock Assessment | Yes       |  |
| AFSC                           | NPFMC                     | Bering Sea / Aleutian Islands Flathead Sole Complex                      | 2019            | 6                        | Operational Stock Assessment | Yes       | The assessment is for the Flathead Sole Complex indicator stock, Flathead sole.                      |
| AFSC                           | NPFMC                     | Bering Sea / Aleutian Islands Rock Sole Complex                          | 2019            | 6                        | Operational Stock Assessment | Yes       | The assessment listed is for the Rock Sole Complex indicator stock, Northern rock sole.              |
| AFSC                           | NPFMC                     | Bering Sea / Aleutian Islands Skate Complex                              | 2019            | 6                        | Operational Stock Assessment | Yes       | The assessment is for the Bering Sea / Aleutian Islands Skate Complex indicator stock, Alaska skate. |
| AFSC                           | NPFMC                     | Blue king crab - Pribilof Islands  | 2019            | 2                        | Operational Stock Assessment | No        |  |
| AFSC                           | NPFMC                     | Blue king crab - Saint Matthew Island                                    | 2019            | 5                        | Operational Stock Assessment | Yes       |  |
| AFSC                           | NPFMC                     | Dusky rockfish - Gulf of Alaska  | 2019            | 6                        | Operational Stock Assessment | Yes       |  |
| AFSC                           | NPFMC                     | Flathead sole - Gulf of Alaska   | 2019            | 6                        | Stock Monitoring Update      | Yes       |  |
| AFSC                           | NPFMC                     | Golden king crab - Aleutian Islands                                      | 2019            | 5                        | Operational Stock Assessment | Yes       |  |
| AFSC                           | NPFMC                     | Greenland halibut - Bering Sea / Aleutian Islands                        | 2019            | 6                        | Operational Stock Assessment | Yes       |  |

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| Science Center(s) <sup>1</sup> | Jurisdiction <sup>2</sup> | Stock  | Last Assessment |                          |                              |           | Assessment Notes  |
|--------------------------------|---------------------------|--|-----------------|--------------------------|------------------------------|-----------|---|
|                                |                           |  | Fiscal Year     | Model Class <sup>3</sup> | Type                         | Adequate? |   |
| AFSC                           | NPFMC                     | Gulf of Alaska Blackspotted and Rougheye Rockfish Complex          | 2019            | 6                        | Stock Monitoring Update      | Yes       |   |
| AFSC                           | NPFMC                     | Gulf of Alaska Deepwater Flatfish Complex                          | 2019            | 6                        | Stock Monitoring Update      | Yes       | The assessment is for Deepwater Flatfish Complex indicator stock, Dover sole.   |
| AFSC                           | NPFMC                     | Gulf of Alaska Demersal Shelf Rockfish Complex                     | 2019            | 3                        | Operational Stock Assessment | Yes       | The assessment is for Demersal Shelf Rockfish Complex indicator stock, yelloweye rockfish.                              |
| AFSC                           | NPFMC                     | Gulf of Alaska Shallow Water Flatfish Complex                      | 2019            | 6                        | Stock Monitoring Update      | Yes       | The assessment is for Gulf of Alaska Shallow Water Flatfish Complex indicator stocks, rock sole and Northern rock sole. |
| AFSC                           | NPFMC                     | Gulf of Alaska Thornyhead Rockfish Complex                         | 2019            | 3                        | Operational Stock Assessment | Yes       | The assessment is for the Thornyhead Rockfish Complex indicator stock, shortspine thornyhead.                           |
| AFSC                           | NPFMC                     | Northern rockfish - Bering Sea / Aleutian Islands                  | 2019            | 6                        | Stock Monitoring Update      | Yes       |   |
| AFSC                           | NPFMC                     | Northern rockfish - Western / Central Gulf of Alaska               | 2019            | 6                        | Operational Stock Assessment | Yes       |   |
| AFSC                           | NPFMC                     | Pacific cod - Bering Sea / Aleutian Islands                        | 2019            | 6                        | Operational Stock Assessment | Yes       |   |
| AFSC                           | NPFMC                     | Pacific cod - Gulf of Alaska                                       | 2019            | 6                        | Operational Stock Assessment | Yes       |   |
| AFSC                           | NPFMC                     | Pacific ocean perch - Bering Sea / Aleutian Islands                | 2019            | 6                        | Operational Stock Assessment | Yes       |   |
| AFSC                           | NPFMC                     | Pacific ocean perch - Gulf of Alaska                               | 2019            | 6                        | Stock Monitoring Update      | Yes       |   |
| AFSC                           | NPFMC                     | Red king crab - Bristol Bay  | 2019            | 5                        | Operational Stock Assessment | Yes       |   |
| AFSC                           | NPFMC                     | Red king crab - Norton Sound                                       | 2019            | 5                        | Operational Stock Assessment | Yes       |   |
| AFSC                           | NPFMC                     | Red king crab - Pribilof Islands                                   | 2018            | 2                        | Operational Stock Assessment | No        |   |
| AFSC                           | NPFMC                     | Rex sole - Gulf of Alaska  | 2019            | 6                        | Stock Monitoring Update      | Yes       |   |
| AFSC                           | NPFMC                     | Sablefish - Eastern Bering Sea / Aleutian Islands / Gulf of Alaska | 2019            | 6                        | Operational Stock Assessment | Yes       |   |

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| Science Center(s) <sup>1</sup> | Jurisdiction <sup>2</sup> | Stock   | Last Assessment |                          |                              |           | Assessment Notes |
|--------------------------------|---------------------------|---|-----------------|--------------------------|------------------------------|-----------|------------------|
|                                |                           |   | Fiscal Year     | Model Class <sup>3</sup> | Type                         | Adequate? |                  |
| AFSC                           | NPFMC                     | Snow crab - Bering Sea  | 2019            | 5                        | Operational Stock Assessment | Yes       |                  |
| AFSC                           | NPFMC                     | Southern Tanner crab - Bering Sea                                 | 2019            | 5                        | Operational Stock Assessment | Yes       |                  |
| AFSC                           | NPFMC                     | Walleye pollock - Aleutian Islands                                | 2019            | 6                        | Operational Stock Assessment | Yes       |                  |
| AFSC                           | NPFMC                     | Walleye pollock - Eastern Bering Sea                              | 2019            | 6                        | Operational Stock Assessment | Yes       |                  |
| AFSC                           | NPFMC                     | Walleye pollock - Western / Central / West Yakutat Gulf of Alaska | 2019            | 6                        | Operational Stock Assessment | Yes       |                  |
| AFSC                           | NPFMC                     | Yellowfin sole - Bering Sea / Aleutian Islands                    | 2019            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | MAFMC                     | Atlantic mackerel - Gulf of Maine / Cape Hatteras                 | 2018            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | MAFMC                     | Atlantic surfclam - Mid-Atlantic Coast                            | 2019            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | MAFMC                     | Black sea bass - Mid-Atlantic Coast                               | 2019            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | MAFMC                     | Bluefish - Atlantic Coast   | 2019            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | MAFMC                     | Butterfish - Gulf of Maine / Cape Hatteras                        | 2017            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | MAFMC                     | Longfin inshore squid - Georges Bank / Cape Hatteras              | 2017            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | MAFMC                     | Northern shortfin squid - Northwestern Atlantic Coast             | 2005            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | MAFMC                     | Ocean quahog - Atlantic Coast                                     | 2017            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | MAFMC                     | Scup - Atlantic Coast   | 2019            | 6                        | Stock Monitoring Update      | Yes       |                  |
| NEFSC                          | MAFMC                     | Summer flounder - Mid-Atlantic Coast                              | 2019            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | MAFMC                     | Tilefish - Mid-Atlantic Coast                                     | 2017            | 6                        | Operational Stock Assessment | Yes       |                  |

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|                                |                           |   | Fiscal Year     | Model Class <sup>3</sup> | Type                         | Adequate? |                  |
| NEFSC                          | NEFMC                     | Acadian redfish - Gulf of Maine / Georges Bank        | 2018            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | NEFMC                     | American plaice - Gulf of Maine / Georges Bank        | 2018            | 4                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | NEFMC                     | Atlantic cod - Georges Bank                           | 2018            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Atlantic cod - Gulf of Maine                          | 2018            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | NEFMC                     | Atlantic halibut - Northwestern Atlantic Coast        | 2018            | 1                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Atlantic herring - Northwestern Atlantic Coast        | 2018            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | NEFMC                     | Atlantic wolffish - Gulf of Maine / Georges Bank      | 2018            | 5                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | NEFMC                     | Barndoor skate - Georges Bank / Southern New England  | 2019            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Clearnose skate - Southern New England / Mid-Atlantic | 2019            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Haddock - Georges Bank                                | 2018            | 4                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | NEFMC                     | Haddock - Gulf of Maine                               | 2018            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | NEFMC                     | Little skate - Georges Bank / Southern New England    | 2019            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Ocean pout - Northwestern Atlantic Coast              | 2018            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Offshore hake - Northwestern Atlantic Coast           | 2011            | -2                       | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Pollock - Gulf of Maine / Georges Bank                | 2018            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | NEFMC                     | Red deepsea crab - Northwestern Atlantic              | 2006            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Red hake - Gulf of Maine / Northern Georges Bank      | 2018            | 2                        | Operational Stock Assessment | No        |                  |

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|                                |                           |   | Fiscal Year     | Model Class <sup>3</sup> | Type                         | Adequate? |                  |
| NEFSC                          | NEFMC                     | Red hake - Southern Georges Bank / Mid-Atlantic       | 2018            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Rosette skate - Southern New England / Mid-Atlantic   | 2019            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Sea scallop - Northwestern Atlantic Coast             | 2018            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | NEFMC                     | Silver hake - Gulf of Maine / Northern Georges Bank   | 2018            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Silver hake - Southern Georges Bank / Mid-Atlantic    | 2018            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Smooth skate - Gulf of Maine                          | 2019            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Thorny skate - Gulf of Maine                          | 2019            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | White hake - Gulf of Maine / Georges Bank             | 2018            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | NEFMC                     | Windowpane - Gulf of Maine / Georges Bank             | 2018            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Windowpane - Southern New England / Mid-Atlantic      | 2018            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Winter flounder - Georges Bank                        | 2018            | 4                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | NEFMC                     | Winter flounder - Gulf of Maine                       | 2018            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Winter flounder - Southern New England / Mid-Atlantic | 2018            | 6                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | NEFMC                     | Winter skate - Georges Bank / Southern New England    | 2019            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Witch flounder - Northwestern Atlantic Coast          | 2018            | 2                        | Operational Stock Assessment | No        |                  |
| NEFSC                          | NEFMC                     | Yellowtail flounder - Cape Cod / Gulf of Maine        | 2018            | 4                        | Operational Stock Assessment | Yes       |                  |
| NEFSC                          | NEFMC                     | Yellowtail flounder - Georges Bank                    | 2018            | 2                        | Operational Stock Assessment | No        |                  |

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| Science Center(s) <sup>1</sup> | Jurisdiction <sup>2</sup> | Stock   | Last Assessment |                          |                              |           | Assessment Notes                           |
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|                                |                           |   | Fiscal Year     | Model Class <sup>3</sup> | Type                         | Adequate? |  |
| NEFSC                          | NEFMC                     | Yellowtail flounder - Southern New England / Mid-Atlantic | 2018            | 6                        | Operational Stock Assessment | Yes       |  |
| NEFSC                          | NEFMC/MAFMC               | Goosefish - Gulf of Maine / Northern Georges Bank         | 2019            | 2                        | Operational Stock Assessment | No        | Assessment sunset at close of FY19         |
| NEFSC                          | NEFMC/MAFMC               | Goosefish - Southern Georges Bank / Mid-Atlantic          | 2019            | 2                        | Operational Stock Assessment | No        | Assessment sunset at close of FY19         |
| NEFSC                          | NEFMC/MAFMC               | Spiny dogfish - Atlantic Coast                            | 2015            | 5                        | Operational Stock Assessment | Yes       |  |
| NWFSC/SWFSC                    | PFMC                      | Arrowtooth flounder - Pacific Coast                       | 2017            | 6                        | Operational Stock Assessment | Yes       |  |
| NWFSC/SWFSC                    | PFMC                      | Black rockfish - Northern Pacific Coast                   | 2019            | 6                        | Stock Monitoring Analysis    | Yes       | Washington                                 |
| NWFSC/SWFSC                    | PFMC                      | Black rockfish - Southern Pacific Coast                   | 2019            | 6                        | Stock Monitoring Analysis    | Yes       | California + Oregon stocks                 |
| NWFSC/SWFSC                    | PFMC                      | Blackgill rockfish - Southern California                  | 2019            | 6                        | Stock Monitoring Analysis    | Yes       |  |
| NWFSC/SWFSC                    | PFMC                      | Blue rockfish - California                                | 2019            | 6                        | Stock Monitoring Analysis    | Yes       | Assessed as a complex with Deacon rockfish |
| NWFSC/SWFSC                    | PFMC                      | Bocaccio - Southern Pacific Coast                         | 2017            | 6                        | Operational Stock Assessment | Yes       |  |
| NWFSC/SWFSC                    | PFMC                      | Brown rockfish - Pacific Coast                            | 2014            | 3                        | Operational Stock Assessment | No        | Inadequate at the end of FY 19             |
| NWFSC/SWFSC                    | PFMC                      | Cabazon - California                                      | 2019            | 6                        | Operational Stock Assessment | Yes       |  |
| NWFSC/SWFSC                    | PFMC                      | California scorpionfish - Southern California             | 2017            | 6                        | Operational Stock Assessment | Yes       |  |
| NWFSC/SWFSC                    | PFMC                      | Canary rockfish - Pacific Coast                           | 2017            | 6                        | Operational Stock Assessment | Yes       |  |
| NWFSC/SWFSC                    | PFMC                      | Chilipepper - Southern Pacific Coast                      | 2017            | 6                        | Operational Stock Assessment | Yes       |  |
| NWFSC/SWFSC                    | PFMC                      | Chinook salmon - Sacramento River Fall                    | 2019            | 3                        | Operational Stock Assessment | Yes       |  |
| NWFSC/SWFSC                    | PFMC                      | Chinook salmon - Klamath River Fall                       | 2019            | 4                        | Operational Stock Assessment | Yes       |  |



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|                                |                           |                                       | Fiscal Year     | Model Class <sup>3</sup> | Type                         | Adequate? |  |
| NWFSC/<br>SWFSC                | PPMC                      | Cowcod - Southern California          | 2019            | 3                        | Operational Stock Assessment | Yes       |  |
| NWFSC/<br>SWFSC                | PPMC                      | Darkblotched rockfish - Pacific Coast | 2019            | 6                        | Stock Monitoring Analysis    | Yes       |  |
| NWFSC/<br>SWFSC                | PPMC                      | Dover sole - Pacific Coast            | 2019            | 6                        | Stock Monitoring Analysis    | Yes       |  |
| NWFSC/<br>SWFSC                | PPMC                      | English sole - Pacific Coast          | 2013            | 3                        | Operational Stock Assessment | No        |  |
| NWFSC/<br>SWFSC                | PPMC                      | Gopher rockfish - Northern California | 2019            | 6                        | Operational Stock Assessment | Yes       |  |
| NWFSC/<br>SWFSC                | PPMC                      | Greenspotted rockfish - Pacific Coast | 2011            | 3                        | Operational Stock Assessment | No        |  |
| NWFSC/<br>SWFSC                | PPMC                      | Greenstriped rockfish - Pacific Coast | 2009            | 6                        | Operational Stock Assessment | No        |  |
| NWFSC/<br>SWFSC                | PPMC                      | Kelp greenling - Oregon               | 2015            | 6                        | Operational Stock Assessment | Yes       |  |
| NWFSC/<br>SWFSC                | PPMC                      | Lingcod - Pacific Coast               | 2019            | 6                        | Stock Monitoring Analysis    | Yes       |  |
| NWFSC/<br>SWFSC                | PPMC                      | Longnose skate - Pacific Coast        | 2019            | 6                        | Operational Stock Assessment | Yes       |  |
| NWFSC/<br>SWFSC                | PPMC                      | Longspine thornyhead - Pacific Coast  | 2019            | 6                        | Stock Monitoring Analysis    | Yes       |  |
| NWFSC/<br>SWFSC                | PPMC                      | Pacific ocean perch - Pacific Coast   | 2018            | 6                        | Operational Stock Assessment | Yes       |  |
| NWFSC/<br>SWFSC                | PPMC                      | Pacific sanddab - Pacific Coast       | 2013            | 6                        | Operational Stock Assessment | No        | Partial acceptance -- status determinations only |
| NWFSC/<br>SWFSC                | PPMC                      | Petrale sole - Pacific Coast          | 2019            | 6                        | Operational Stock Assessment | Yes       |  |
| NWFSC/<br>SWFSC                | PPMC                      | Rex sole - Pacific Coast              | 2013            | 3                        | Operational Stock Assessment | No        |  |
| NWFSC/<br>SWFSC                | PPMC                      | Rougheye rockfish - Pacific Coast     | 2019            | 6                        | Stock Monitoring Analysis    | Yes       | Assessed as a complex with Blackspotted rockfish |
| NWFSC/<br>SWFSC                | PPMC                      | Sablefish - Pacific Coast             | 2019            | 6                        | Operational Stock Assessment | Yes       |  |

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|                                |                           |   | Fiscal Year     | Model Class <sup>3</sup> | Type                         | Adequate? |  |
| NWFSC/<br>SWFSC                | PFMC                      | Shortbelly rockfish - Pacific Coast                         | 2007            | 6                        | Operational Stock Assessment | No        |  |
| NWFSC/<br>SWFSC                | PFMC                      | Shortspine thornyhead - Pacific Coast                       | 2013            | 6                        | Operational Stock Assessment | No        |  |
| NWFSC/<br>SWFSC                | PFMC                      | Spiny dogfish - Pacific Coast                               | 2011            | 6                        | Operational Stock Assessment | No        |  |
| NWFSC/<br>SWFSC                | PFMC                      | Splitnose rockfish - Pacific Coast                          | 2009            | 6                        | Operational Stock Assessment | No        |  |
| NWFSC/<br>SWFSC                | PFMC                      | Starry flounder - Pacific Coast                             | 2018            | 2                        | Operational Stock Assessment | No        | Stock is assessed in Northern and Southern components and treated as a complex |
| NWFSC/<br>SWFSC                | PFMC                      | Vermilion rockfish - California                             | 2005            | -4                       | Operational Stock Assessment | No        |  |
| NWFSC/<br>SWFSC                | PFMC                      | Widow rockfish - Pacific Coast                              | 2019            | 6                        | Operational Stock Assessment | Yes       |  |
| NWFSC/<br>SWFSC                | PFMC                      | Yelloweye rockfish - Pacific Coast                          | 2017            | 6                        | Operational Stock Assessment | Yes       |  |
| NWFSC/<br>SWFSC                | PFMC                      | Yellowtail rockfish - Northern Pacific Coast                | 2017            | 6                        | Operational Stock Assessment | Yes       |  |
| PIFSC                          | WPFMC                     | American Samoa Bottomfish Multi-species Complex             | 2019            | 3                        | Operational Stock Assessment | Yes       |  |
| PIFSC                          | WPFMC                     | Guam Bottomfish Multi-species Complex                       | 2019            | 3                        | Operational Stock Assessment | Yes       |  |
| PIFSC                          | WPFMC                     | Main Hawaiian Islands Deep Bottomfish Multi-species Complex | 2018            | 3                        | Operational Stock Assessment | Yes       | Two assessments, one for the complex and another for the Opakapaka stock       |
| PIFSC                          | WPFMC                     | Northern Mariana Islands Bottomfish Multi-species Complex   | 2019            | 3                        | Operational Stock Assessment | Yes       |  |
| SEFSC                          | CFMC                      | Caribbean Groupers  | 2015            | 2                        | Operational Stock Assessment | No        | Assessment of complex component red hind                                       |
| SEFSC                          | CFMC                      | Caribbean Parrotfish Complex                                | NA              |                          |                              | No        |  |
| SEFSC                          | CFMC                      | Caribbean Snappers  | 2012            | 2                        | Operational Stock Assessment | No        | Assessment of silk snapper delayed   |
| SEFSC                          | CFMC                      | Caribbean spiny lobster - Puerto Rico                       | 2009            | 2                        | Operational Stock Assessment | No        |  |

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|                                |                           |  | Fiscal Year     | Model Class <sup>3</sup> | Type                         | Adequate? |                                    |
| SEFSC                          | CFMC                      | Caribbean spiny lobster - St. Croix                    | 2009            | 2                        | Operational Stock Assessment | No        |                                    |
| SEFSC                          | CFMC                      | Caribbean spiny lobster - St. Thomas/St. John          | 2009            | 2                        | Operational Stock Assessment | No        |                                    |
| SEFSC                          | CFMC                      | Queen conch - Caribbean                                | 2009            | 2                        | Operational Stock Assessment | No        |                                    |
| SEFSC                          | CFMC                      | Triggerfish and Filefish Complex - Puerto Rico         | 2013            | -1                       | Operational Stock Assessment | No        |                                    |
| SEFSC                          | CFMC                      | Triggerfish and Filefish Complex - St. Croix           | 2013            | -1                       | Operational Stock Assessment | No        |                                    |
| SEFSC                          | CFMC                      | Triggerfish and Filefish Complex - St. Thomas/St. John | 2013            | -1                       | Operational Stock Assessment | No        |                                    |
| SEFSC                          | GMFMC                     | Brown shrimp - Gulf of Mexico                          | 2019            | 5                        | Operational Stock Assessment | Yes       |                                    |
| SEFSC                          | GMFMC                     | Gag - Gulf of Mexico                                   | 2014            | 6                        | Operational Stock Assessment | No        | Inadequate at the close of FY19    |
| SEFSC                          | GMFMC                     | Gray triggerfish - Gulf of Mexico                      | 2015            | 6                        | Operational Stock Assessment | Yes       |                                    |
| SEFSC                          | GMFMC                     | Greater amberjack - Gulf of Mexico                     | 2017            | 6                        | Operational Stock Assessment | Yes       |                                    |
| SEFSC                          | GMFMC                     | Hogfish - Eastern Gulf of Mexico                       | 2018            | 6                        | Operational Stock Assessment | Yes       |                                    |
| SEFSC                          | GMFMC                     | Pink shrimp - Gulf of Mexico                           | 2019            | 5                        | Operational Stock Assessment | Yes       |                                    |
| SEFSC                          | GMFMC                     | Red grouper - Gulf of Mexico                           | 2019            | 6                        | Operational Stock Assessment | Yes       |                                    |
| SEFSC                          | GMFMC                     | Red snapper - Gulf of Mexico                           | 2018            | 6                        | Operational Stock Assessment | Yes       |                                    |
| SEFSC                          | GMFMC                     | Royal red shrimp - Gulf of Mexico                      | 2018            | 2                        | Operational Stock Assessment | No        | Assessment recorded in error in Q2 |
| SEFSC                          | GMFMC                     | Tilefish - Gulf of Mexico                              | 2011            | 6                        | Operational Stock Assessment | No        |                                    |
| SEFSC                          | GMFMC                     | Vermilion snapper - Gulf of Mexico                     | 2016            | 6                        | Operational Stock Assessment | Yes       |                                    |

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|                                |                           |   | Fiscal Year     | Model Class <sup>3</sup> | Type                         | Adequate? |   |
| SEFSC                          | GMFMC                     | White shrimp - Gulf of Mexico             | 2019            | 5                        | Operational Stock Assessment | Yes       |   |
| SEFSC                          | GMFMC                     | Yellowedge grouper - Gulf of Mexico       | 2011            | 6                        | Operational Stock Assessment | No        |   |
| SEFSC                          | HMS                       | Atlantic sharpnose shark - Atlantic       | 2014            | 6                        | Operational Stock Assessment | No        | Inadequate at the close of FY19 -- partial acceptance, status determinations only |
| SEFSC                          | HMS                       | Atlantic sharpnose shark - Gulf of Mexico | 2014            | 6                        | Operational Stock Assessment | No        | Inadequate at the close of FY19 -- partial acceptance, status determinations only |
| SEFSC                          | HMS                       | Blacknose shark - Atlantic                | 2011            | 6                        | Operational Stock Assessment | No        |   |
| SEFSC                          | HMS                       | Blacknose shark - Gulf of Mexico          | 2011            | -6                       | Operational Stock Assessment | No        |   |
| SEFSC                          | HMS                       | Blacktip shark - Atlantic                 | 2006            | -6                       | Operational Stock Assessment | No        |   |
| SEFSC                          | HMS                       | Blacktip shark - Gulf of Mexico           | 2018            | 6                        | Operational Stock Assessment | Yes       |   |
| SEFSC                          | HMS                       | Blue shark - North Atlantic               | 2016            | 6                        | Operational Stock Assessment | Yes       |   |
| SEFSC                          | HMS                       | Bonnethead - Atlantic                     | 2013            | -6                       | Operational Stock Assessment | No        | Rejected -- results too uncertain to be considered adequate                       |
| SEFSC                          | HMS                       | Bonnethead - Gulf of Mexico               | 2013            | -6                       | Operational Stock Assessment | No        | Rejected -- results too uncertain to be considered adequate                       |
| SEFSC                          | HMS                       | Dusky shark - Atlantic                    | 2016            | 6                        | Operational Stock Assessment | Yes       |   |
| SEFSC                          | HMS                       | Finetooth shark - Atlantic                | 2008            | 3                        | Operational Stock Assessment | No        |   |
| SEFSC                          | HMS                       | Porbeagle - Atlantic                      | 2010            | 6                        | Operational Stock Assessment | No        |   |
| SEFSC                          | HMS                       | Sandbar shark - Atlantic                  | 2018            | 6                        | Operational Stock Assessment | Yes       | Atlantic and Gulf of Mexico stock   |
| SEFSC                          | HMS                       | Scalloped Hammerhead Complex - Atlantic   | 2010            | 3                        | Operational Stock Assessment | No        |   |
| SEFSC                          | HMS                       | Shortfin mako - Atlantic                  | 2018            | 6                        | Operational Stock Assessment | Yes       |   |

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|                                |                           |   | Fiscal Year     | Model Class <sup>3</sup> | Type                         | Adequate? |  |
| SEFSC                          | SAFMC                     | Black grouper - Southern Atlantic Coast     | 2010            | 6                        | Operational Stock Assessment | No        | Assessment planned for FY18 delayed indefinitely |
| SEFSC                          | SAFMC                     | Black sea bass - Southern Atlantic Coast    | 2018            | 6                        | Operational Stock Assessment | Yes       |  |
| SEFSC                          | SAFMC                     | Blueline tilefish - Southern Atlantic Coast | 2018            | 3                        | Operational Stock Assessment | Yes       |  |
| SEFSC                          | SAFMC                     | Brown rock shrimp - Southern Atlantic Coast | 2018            | 2                        | Operational Stock Assessment | No        | Assessment recorded in error in Q2               |
| SEFSC                          | SAFMC                     | Brown shrimp - Southern Atlantic Coast      | 2018            | 2                        | Operational Stock Assessment | No        | Assessment recorded in error in Q2               |
| SEFSC                          | SAFMC                     | Dolphinfish - Southern Atlantic Coast       | 2000            | 2                        | Operational Stock Assessment | No        |  |
| SEFSC                          | SAFMC                     | Gag - Southern Atlantic Coast               | 2014            | 6                        | Operational Stock Assessment | No        | Inadequate at the end of FY 19                   |
| SEFSC                          | SAFMC                     | Gray triggerfish - Southern Atlantic Coast  | 2016            | -6                       | Operational Stock Assessment | No        |  |
| SEFSC                          | SAFMC                     | Greater amberjack - Southern Atlantic Coast | 2008            | 5                        | Operational Stock Assessment | No        |  |
| SEFSC                          | SAFMC                     | Hogfish - Southeast Florida                 | 2015            | 6                        | Operational Stock Assessment | Yes       |  |
| SEFSC                          | SAFMC                     | Pink shrimp - Southern Atlantic Coast       | 2018            | 2                        | Operational Stock Assessment | No        | Assessment recorded in error in Q2               |
| SEFSC                          | SAFMC                     | Red grouper - Southern Atlantic Coast       | 2017            | 6                        | Operational Stock Assessment | Yes       |  |
| SEFSC                          | SAFMC                     | Red porgy - Southern Atlantic Coast         | 2013            | 6                        | Operational Stock Assessment | No        |  |
| SEFSC                          | SAFMC                     | Red snapper - Southern Atlantic Coast       | 2016            | 6                        | Operational Stock Assessment | Yes       | Partial acceptance -- biomass estimates only     |
| SEFSC                          | SAFMC                     | Snowy grouper - Southern Atlantic Coast     | 2014            | 6                        | Operational Stock Assessment | No        | Inadequate at the end of FY 19                   |
| SEFSC                          | SAFMC                     | Speckled hind - Southern Atlantic Coast     | 2002            | 2                        | Operational Stock Assessment | No        |  |
| SEFSC                          | SAFMC                     | Tilefish - Southern Atlantic Coast          | 2016            | 6                        | Operational Stock Assessment | Yes       |  |

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|                                |                           |  | Fiscal Year     | Model Class <sup>3</sup> | Type                         | Adequate? |                                    |
| SEFSC                          | SAFMC                     | Vermilion snapper - Southern Atlantic Coast                        | 2018            | 6                        | Operational Stock Assessment | Yes       |                                    |
| SEFSC                          | SAFMC                     | Warsaw grouper - Southern Atlantic Coast                           | 2002            | 2                        | Operational Stock Assessment | No        |                                    |
| SEFSC                          | SAFMC                     | White shrimp - Southern Atlantic Coast                             | 2018            | 2                        | Operational Stock Assessment | No        | Assessment recorded in error in Q2 |
| SEFSC                          | SAFMC/<br>GMFMC           | Caribbean spiny lobster - Southern Atlantic Coast / Gulf of Mexico | 2011            | -6                       | Operational Stock Assessment | No        |                                    |
| SEFSC                          | SAFMC/<br>GMFMC           | Cobia - Gulf of Mexico   | 2013            | 6                        | Operational Stock Assessment | No        |                                    |
| SEFSC                          | SAFMC/<br>GMFMC           | Cobia - Southern Atlantic Coast                                    | 2013            | 6                        | Operational Stock Assessment | No        |                                    |
| SEFSC                          | SAFMC/<br>GMFMC           | King mackerel - Gulf of Mexico                                     | 2014            | 6                        | Operational Stock Assessment | No        | Inadequate at the end of FY 19     |
| SEFSC                          | SAFMC/<br>GMFMC           | King mackerel - Southern Atlantic Coast                            | 2014            | 6                        | Operational Stock Assessment | No        | Inadequate at the end of FY 19     |
| SEFSC                          | SAFMC/<br>GMFMC           | Mutton snapper - Southern Atlantic Coast / Gulf of Mexico          | 2015            | 6                        | Operational Stock Assessment | Yes       |                                    |
| SEFSC                          | SAFMC/<br>GMFMC           | Spanish mackerel - Gulf of Mexico                                  | 2013            | 6                        | Operational Stock Assessment | No        |                                    |
| SEFSC                          | SAFMC/<br>GMFMC           | Spanish mackerel - Southern Atlantic Coast                         | 2013            | 6                        | Operational Stock Assessment | No        |                                    |
| SEFSC                          | SAFMC/<br>GMFMC           | Yellowtail snapper - Southern Atlantic Coast / Gulf of Mexico      | 2013            | 6                        | Operational Stock Assessment | No        |                                    |
| SWFSC                          | PFMC                      | Northern anchovy - Southern Pacific Coast                          | 1995            | 2                        | Operational Stock Assessment | No        |                                    |
| SWFSC                          | PFMC                      | Opalescent inshore squid - Pacific Coast                           | 2007            | 2                        | Operational Stock Assessment | No        |                                    |
| SWFSC                          | PFMC                      | Pacific chub mackerel - Pacific Coast                              | 2019            | 6                        | Operational Stock Assessment | Yes       |                                    |
| SWFSC                          | PFMC                      | Pacific sardine - Pacific Coast                                    | 2019            | 6                        | Operational Stock Assessment | Yes       |                                    |

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|                                |                           |       | Fiscal Year     | Model Class <sup>3</sup> | Type | Adequate? |                  |

## Footnotes

<sup>1</sup> NOAA Fisheries Science Centers include Alaska Fisheries Science Center (AFSC), Northeast Fisheries Science Center (NEFSC), Northwest Fisheries Science Center (NWFS), Pacific Islands Fisheries Science Center (PIFSC), Southeast Fisheries Science Center (SEFSC) and Southwest Fisheries Science Center (SWFSC). In some cases, assessments are conducted by multiple science centers (e.g. NW/SW and SW/PI).

<sup>2</sup> Jurisdictions include Caribbean Fishery Management Council (CFMC), Gulf of Mexico Fishery Management Council (GMFMC), Atlantic Highly Migratory Species Division (HMS), Mid-Atlantic Fishery Management Council (MAFMC), New England Fishery Management Council (NEFMC), North Pacific Fishery Management Council (NPFMC), Pacific Fishery Management Council (PFMC), South Atlantic Fishery Management Council (SAFMC) and Western Pacific Fishery Management Council (WPFMC).

<sup>3</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 <https://spo.nmfs.noaa.gov/content/tech-memo/SAIP2018>. A negative level indicates that an assessment was attempted at that level of complexity, but the effort was not accepted in its technical review.

\* Changes are indicated by red, bold font.

## Appendix E. Surveys completed by NOAA Fisheries broken out by quarter for FY2019

### Completed surveys -- FY 2019 Quarter 1 (October - December, 2018)

| Science Center(s) <sup>1</sup> | Vessel Type | Survey   | Notes                         |
|--------------------------------|-------------|--|-------------------------------|
| NEFSC                          | Charter     | Northeast Ecosystem Monitoring (EcoMon)_Fall                   |                               |
| NEFSC                          | NOAA Vessel | NEFSC Bottom Trawl Survey Autumn - October/November component  | NOAA Vessel Henry B. Bigelow  |
| NWFSC                          | Charter     | West Coast Groundfish Bottom Trawl Survey 2018 Survey Pass 2   |                               |
| PIFSC                          | NOAA Vessel | MHI Bottomfish SE-18-06  | NOAA Vessel Oscar Elton Sette |
| SEFSC                          | NOAA Vessel | SEAMAP Fall Shrimp/Bottomfish Survey                           | NOAA Vessel Oscar Elton Sette |
| SWFSC                          | Charter     | California Cooperative Fisheries Investigations (CalCOFI) Fall |                               |

### Completed surveys -- FY 2019 Quarter 2 (January - March, 2019)

| Science Center(s) <sup>1</sup> | Vessel Type    | Survey  | Notes   |
|--------------------------------|----------------|---|---|
| <b>AFSC</b>                    | <b>Charter</b> | <b>Movement and Migration of Key Alaska Fisheries</b>                   | <b>Completed early -- Originally planned for Q4</b> |
| AFSC                           | NOAA Vessel    | Walleye Pollock Shelikof/Chirikof Shelf-break (GOA) Pre-spawning Survey | NOAA Vessel Oscar Dyson                             |
| SWFSC                          | Charter        | U.S. Antarctic Marine Living Resources Program                          |   |
| SWFSC                          | NOAA Vessel    | California Cooperative Fisheries Investigations (CalCOFI) Winter        | NOAA Vessel Reuben Lasker                           |

### Completed surveys -- FY 2019 Quarter 3 (April - June, 2019)

| Science Center(s) <sup>1</sup> | Vessel Type | Survey  | Notes   |
|--------------------------------|-------------|---|---|
| AFSC                           | NOAA Vessel | EMA-FOCI Larval Groundfish Assessment(concatenated two cruises to a single cruise: formerly Eco FOCI_Gulf of Alaska Late Larval Pollock Survey and Eco FOCI Bering Sea Zoo- and Ichthyoplankton Survey) | NOAA Vessel Oscar Dyson                             |
| NEFSC                          | Charter     | Cooperative Research Survey - Longline  | <b>Not on initial schedule</b>                      |
| NEFSC                          | Charter     | Integrated Benthic Habitat and Sea Scallop Resource Assessment Survey   | <b>Completed early -- Originally planned for Q4</b> |
| NEFSC                          | NOAA Vessel | NEFSC Spring Bottom Trawl Survey  | NOAA Vessel Henry B. Bigelow                        |
| NEFSC                          | NOAA Vessel | Northeast Ecosystem Monitoring (EcoMon)_Spring  | NOAA Vessel Henry B. Bigelow                        |
| NWFSC                          | Charter     | West Coast Groundfish Bottom Trawl Survey 2019 Pass 1   | <b>Completed early -- Originally planned for Q4</b> |
| NWFSC                          | Charter     | West Coast Groundfish Bottom Trawl Survey 2019 Pass 2   | <b>Completed early -- Originally planned for Q4</b> |



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|       |             |   |                                |
|-------|-------------|---|--------------------------------|
| NWFSC | NOAA Vessel | 2019 Juvenile Salmon & Ocean Ecosystem Survey | NOAA Vessel Bell M.<br>Shimada |
|-------|-------------|---|--------------------------------|

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| <b>Completed surveys -- FY 2019 Quarter 3 (April - June, 2019)</b>     |                    |   |   |
|--|--------------------|---|---|
| <b>Science Center(s)<sup>1</sup></b>                                   | <b>Vessel Type</b> | <b>Survey</b>   | <b>Notes</b>  |
| NWFSC  | NOAA Vessel        | Northern California Current (NCC) Ecosystem Forecasting Survey -- Spring/Summer Upwelling Season Survey | NOAA Vessel Bell M. Shimada   |
| PIFSC  | NOAA Vessel        | <b>Hawaiian Archipelago Life History</b>  | <b>NOAA Vessel Oscar Elton Sette, Originally scheduled for American Samoa, Completed early -- Originally planned for Q4</b> |
| SEFSC  | NOAA Vessel        | SEAMAP (Southeast Area Monitoring and Assessment Program) Spring Plankton Survey                        | NOAA Vessel Oregon II   |
| SWFSC  | NOAA Vessel        | California Cooperative Fisheries Investigations (CalCOFI) Spring  | NOAA Vessel Reuben Lasker   |
| SWFSC  | NOAA Vessel        | Juvenile Rockfish Survey  | NOAA Vessel Reuben Lasker   |
| <b>Completed surveys -- FY 2019 Quarter 4 (July - September, 2019)</b> |                    |   |   |
| <b>Science Center(s)<sup>1</sup></b>                                   | <b>Vessel Type</b> | <b>Survey</b>   | <b>Notes</b>  |
| AFSC   | Charter            | Arctic Integrated Ecosystem Survey  |   |
| AFSC   | Charter            | BASIS Northern Bering Sea   |   |
| AFSC   | Charter            | Eastern Bering Sea Groundfish and Crab Bottom Trawl Survey  |   |
| AFSC   | Charter            | GOA/EBS/AI Longline Stock Assessment Survey   |   |
| AFSC   | Charter            | Gulf of Alaska Groundfish Bottom Trawl Survey   |   |
| AFSC   | Charter            | Gulf of Alaska - Southeast Coastal Monitoring age-0 groundfish and salmon recruitment processes         |   |
| AFSC   | Charter            | Northern Bering Sea Groundfish and Crab Bottom Trawl Survey - Charter Vessel 1                          |   |
| AFSC   | NOAA Vessel        | EMA-FOCI age-0 groundfish and salmon recruitment processes (formerly known as BASIS)                    | NOAA Vessel Oscar Dyson   |
| AFSC   | NOAA Vessel        | Walleye Pollock GOA Summer Survey   | NOAA Vessel Oscar Dyson   |
| NEFSC  | Charter            | Surf Clam & Ocean Quahog Dredge Survey  |   |
| NEFSC  | NOAA Vessel        | ASMFC Northern Shrimp Survey  | NOAA Vessel Gloria Michelle   |
| NEFSC  | NOAA Vessel        | Fall Bottom Trawl Survey  | NOAA Vessel Henry B. Bigelow  |
| NEFSC  | NOAA Vessel        | Northeast Ecosystem Monitoring (EcoMon)_Summer  | NOAA Vessel Henry B. Bigelow  |
| NWFSC  | NOAA Vessel        | Northern California Current (NCC) Ecosystem Forecasting Survey -- Autumn End of Upwelling Season Survey | NOAA Vessel Bell M. Shimada   |

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| <b>Completed surveys -- FY 2019 Quarter 4 (July - September, 2019)</b> |                    |  |                               |
|--|--------------------|--|-------------------------------|
| <b>Science Center(s)<sup>1</sup></b>                                   | <b>Vessel Type</b> | <b>Survey</b>  | <b>Notes</b>                  |
| NWFSC  | NOAA Vessel        | The Integrated Ecosystem and Pacific Hake Acoustic Trawl Survey, formerly the Pacific Hake Spawning Biomass Acoustic Survey, is the only source of fisheries independent data and is used to manage the Hake Stock | NOAA Vessel Bell M. Shimada   |
| PIFSC  | NOAA Vessel        | <b>Main Hawaiian Islands Insular Bottomfish</b>  | NOAA Vessel Oscar Elton Sette |
| SEFSC  | Charter            | Panama City Laboratory Reef Fish Trap / Video  |                               |
| SEFSC  | Charter            | SouthEast Fishery-Independent Survey (SEFIS) - charter   |                               |
| SEFSC  | NOAA Vessel        | SEAMAP (Southeast Area Monitoring and Assessment Program) Fall Plankton Survey   | NOAA Vessel Pisces            |
| SEFSC  | NOAA Vessel        | SEAMAP Gulf of Mexico Reef Fish  | NOAA Vessel Pisces            |
| SEFSC  | NOAA Vessel        | SEAMAP Summer Groundfish   | NOAA Vessel Oregon II         |
| SEFSC  | NOAA Vessel        | SEFSC Shark/Red Snapper Bottom Longline Survey   | NOAA Vessel Oregon II         |
| SEFSC  | NOAA Vessel        | SouthEast Fishery-Independent Survey (SEFIS) - NOAA ship   | NOAA Vessel Pisces            |
| SWFSC  | Charter            | California Cooperative Fisheries Investigations (CalCOFI) Summer   |                               |
| SWFSC  | NOAA Vessel        | West Coast Pelagic Fish Survey   | NOAA Vessel Reuben Lasker     |
| <b>Footnotes</b>   |                    |  |                               |

<sup>1</sup> NOAA Fisheries Science Centers include Alaska Fisheries Science Center (AFSC), Northeast Fisheries Science Center (NEFSC), Northwest Fisheries Science Center (NWFSC), Pacific Islands Fisheries Science Center (PIFSC), Southeast Fisheries Science Center (SEFSC) and Southwest Fisheries Science Center (SWFSC).

\* Changes are highlighted in bold, red text

## Appendix F. NOAA Fisheries planned surveys broken out by quarter for FY2019

### Planned surveys -- FY 2019 Quarter 1 (October - December, 2018)

| Science Center(s) <sup>1</sup> | Vessel Type | Survey   | Notes                         |
|--------------------------------|-------------|--|-------------------------------|
| NEFSC                          | Charter     | Northeast Ecosystem Monitoring (EcoMon)_ Fall                  |                               |
| NEFSC                          | NOAA Vessel | NEFSC Bottom Trawl Survey Autumn - October/November component  | NOAA Vessel Henry B. Bigelow  |
| NWFSC                          | Charter     | West Coast Groundfish Bottom Trawl Survey 2018 Survey Pass 2   |                               |
| PIFSC                          | NOAA Vessel | MHI Bottomfish SE-18-06  | NOAA Vessel Oscar Elton Sette |
| SEFSC                          | NOAA Vessel | SEAMAP Fall Shrimp/Bottomfish Survey                           | NOAA Vessel Oregon II         |
| SWFSC                          | Charter     | California Cooperative Fisheries Investigations (CalCOFI) Fall |                               |

### Planned surveys -- FY 2019 Quarter 2 (January - March, 2019)

| Science Center(s) <sup>1</sup> | Vessel Type        | Survey  | Notes  |
|--------------------------------|--------------------|---|--|
| <b>AFSC</b>                    | <b>Charter</b>     | <b>Movement and Migration of Key Alaska Fisheries</b>   | <b>Completed early -- Originally planned for Q4</b>                          |
| <b>AFSC</b>                    | <b>NOAA Vessel</b> | <b><del>Walleye Pollock Kenai/PWS (GOA) Pre-spawning Survey</del></b>   | <b>NOAA Vessel Oscar Dyson, Not Completed</b>                                |
| <b>AFSC</b>                    | <b>NOAA Vessel</b> | <b>Walleye Pollock Shelikof/Chirikof Shelf-break (GOA) Pre-spawning Survey</b>                                    | <b>NOAA Vessel Oscar Dyson, Completed early -- Originally planned for Q3</b> |
| <b>AFSC</b>                    | <b>NOAA Vessel</b> | <b><del>Walleye Pollock Shumagin/Sanak (GOA) Pre-spawning Survey</del></b>  | <b>NOAA Vessel Oscar Dyson, Not Completed</b>                                |
| <b>NWFSC</b>                   | <b>NOAA Vessel</b> | <b><del>Northern California Current (NCC) Ecosystem Forecasting Survey -- Winter Preconditioning Survey</del></b> | <b>NOAA Vessel Bell M. Shimada, Not Completed</b>                            |
| SWFSC                          | Charter            | U.S. Antarctic Marine Living Resources Program  |  |
| SWFSC                          | NOAA Vessel        | California Cooperative Fisheries Investigations (CalCOFI) Winter  | NOAA Vessel Reuben Lasker  |

### Planned surveys -- FY 2019 Quarter 3 (April - June, 2019)

| Science Center(s) <sup>1</sup> | Vessel Type        | Survey  | Notes   |
|--------------------------------|--------------------|---|---|
| <b>AFSC</b>                    | <b>Charter</b>     | <b><del>EGOA spring sablefish</del></b>   | <b>Not Completed</b>                                  |
| AFSC                           | NOAA Vessel        | EMA-FOCI Larval Groundfish Assessment(concatenated two cruises to a single cruise: formerly Eco FOCI_Gulf of Alaska Late Larval Pollock Survey and Eco FOCI Bering Sea Zoo- and Ichthyoplankton Survey) | NOAA Vessel Oscar Dyson                               |
| <b>AFSC</b>                    | <b>NOAA Vessel</b> | <b><del>Walleye Pollock Shelikof/Chirikof Shelf-break (GOA) Pre-spawning Survey</del></b>   | <b>NOAA Vessel Oscar Dyson, Completed early -- Q2</b> |

### Planned surveys -- FY 2019 Quarter 3 (April - June, 2019)

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| Science Center(s) <sup>1</sup> | Vessel Type | Survey   | Notes   |
|--------------------------------|-------------|--|---|
| NEFSC                          | Charter     | Cooperative Research Survey - Longline   | Not on initial schedule   |
| NEFSC                          | Charter     | Integrated Benthic Habitat and Sea Scallop Resource Assessment Survey  | Completed early -- Originally planned for Q4                                |
| NEFSC                          | NOAA Vessel | NEFSC Spring Bottom Trawl Survey   | NOAA Vessel Henry B. Bigelow  |
| NEFSC                          | NOAA Vessel | Northeast Ecosystem Monitoring (EcoMon)_Spring   | NOAA Vessel Henry B. Bigelow  |
| NWFSC                          | Charter     | <del>Northern California Current Pelagic Ecosystem Survey</del>  | Not Completed   |
| NWFSC                          | Charter     | West Coast Groundfish Bottom Trawl Survey 2019 Pass 1  | Completed early -- Originally planned for Q4                                |
| NWFSC                          | Charter     | West Coast Groundfish Bottom Trawl Survey 2019 Pass 2  | Completed early -- Originally planned for Q4                                |
| NWFSC                          | NOAA Vessel | 2019 Juvenile Salmon & Ocean Ecosystem Survey  | NOAA Vessel Bell M. Shimada, Completed early -- Originally planned for Q4   |
| NWFSC                          | NOAA Vessel | <del>Northern California Current (NCC) Ecosystem Forecasting Survey -- Spring/Summer Upwelling Season Survey</del> | NOAA Vessel Bell M. Shimada, Not Completed                                  |
| PIFSC                          | NOAA Vessel | <del>ESA Corals &amp; Reef Fish</del>  | NOAA Vessel Oscar Elton Sette, Not Completed                                |
| PIFSC                          | NOAA Vessel | Hawaiian Archipelago Life History  | NOAA Vessel Oscar Elton Sette, Completed early -- Originally planned for Q4 |
| SEFSC                          | NOAA Vessel | <del>SEAMAP Gulf of Mexico Reef Fish</del>   | NOAA Vessel Pisces, Delayed to Q4   |
| SEFSC                          | NOAA Vessel | SEAMAP (Southeast Area Monitoring and Assessment Program) Spring Plankton Survey                                   | NOAA Vessel Oregon II   |
| SWFSC                          | NOAA Vessel | California Cooperative Fisheries Investigations (CalCOFI) Spring   | NOAA Vessel Reuben Lasker   |
| SWFSC                          | NOAA Vessel | Juvenile Rockfish Survey   | NOAA Vessel Reuben Lasker, Completed early -- Originally planned for Q4     |

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| Planned surveys -- FY 2019 Quarter 4 (July - September, 2019) |                        |  |   |
|---|------------------------|--|---|
| Science Center(s) <sup>1</sup>                                | Vessel Type            | Survey   | Notes   |
| AFSC  | Charter                | Arctic Integrated Ecosystem Survey   |   |
| AFSC  | Charter                | BASIS Northern Bering Sea  |   |
| AFSC  | Charter                | Eastern Bering Sea Groundfish and Crab Bottom Trawl Survey   |   |
| AFSC  | Charter                | GOA/EBS/AI Longline Stock Assessment Survey  |   |
| AFSC  | Charter                | Gulf of Alaska Groundfish Bottom Trawl Survey  |   |
| AFSC  | Charter                | Gulf of Alaska - Southeast Coastal Monitoring age-0 groundfish and salmon recruitment processes  |   |
| <del>AFSC</del>   | <del>Charter</del>     | <del>Movement and Migration of Key Alaska Fisheries</del>  | <del>Completed early -- Q2</del>                              |
| AFSC  | Charter                | Northern Bering Sea Groundfish and Crab Bottom Trawl Survey - Charter Vessel 1   |   |
| AFSC  | NOAA Vessel            | EMA-FOCI age-0 groundfish and salmon recruitment processes (formerly known as BASIS)   | NOAA Vessel Oscar Dyson                                       |
| AFSC  | NOAA Vessel            | Walleye Pollock GOA Summer Survey  | NOAA Vessel Oscar Dyson                                       |
| <del>NEFSC</del>  | <del>Charter</del>     | <del>Integrated Benthic Habitat and Sea Scallop Resource Assessment Survey</del>   | <del>Completed early -- Q3</del>                              |
| NEFSC   | Charter                | Surf Clam & Ocean Quahog Dredge Survey   |   |
| NEFSC   | NOAA Vessel            | ASMFC Northern Shrimp Survey   | NOAA Vessel Gloria Michelle                                   |
| NEFSC   | NOAA Vessel            | Fall Bottom Trawl Survey   | NOAA Vessel Henry B. Bigelow                                  |
| NEFSC   | NOAA Vessel            | Northeast Ecosystem Monitoring (EcoMon)_Summer   | NOAA Vessel Henry B. Bigelow                                  |
| <del>NWFSC</del>  | <del>Charter</del>     | <del>Southern California Shelf Rockfish Hook and Line Survey</del>   | <del>Delayed to FY2020</del>                                  |
| <del>NWFSC</del>  | <del>Charter</del>     | <del>West Coast Groundfish Bottom Trawl Survey 2019 Pass 1</del>   | <del>Completed early -- Q3</del>                              |
| <del>NWFSC</del>  | <del>Charter</del>     | <del>West Coast Groundfish Bottom Trawl Survey 2019 Pass 2</del>   | <del>Completed early -- Q3</del>                              |
| <del>NWFSC</del>  | <del>NOAA Vessel</del> | <del>2019 Juvenile Salmon &amp; Ocean Ecosystem Survey</del>   | <del>NOAA Vessel Bell M. Shimada, Completed early -- Q3</del> |
| NWFSC   | NOAA Vessel            | The Integrated Ecosystem and Pacific Hake Acoustic Trawl Survey, formerly the Pacific Hake Spawning Biomass Acoustic Survey, is the only source of fisheries independent data and is used to manage the Hake Stock | NOAA Vessel Bell M. Shimada                                   |
| NWFSC   | NOAA Vessel            | Northern California Current (NCC) Ecosystem Forecasting Survey -- Autumn End of Upwelling Season Survey  | NOAA Vessel Bell M. Shimada                                   |

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| Planned surveys -- FY 2019 Quarter 4 (July - September, 2019) |                    |  |  |
|---|--------------------|--|--|
| Science Center(s) <sup>1</sup>                                | Vessel Type        | Survey   | Notes  |
| <b>PIFSC</b>  | <b>NOAA Vessel</b> | <b>Hawaiian Archipelago Life History</b>                                       | <b>NOAA Vessel Oscar Elton Sette, Originally scheduled for American Samoa, Completed early -- Q3</b> |
| <b>PIFSC</b>  | <b>NOAA Vessel</b> | <b>Main Hawaiian Islands Insular Bottomfish</b>                                | <b>Not on Initial Schedule, NOAA Vessel Oscar Elton Sette</b>  |
| <b>SEFSC</b>  | <b>Charter</b>     | <b>Panama City Laboratory Reef Fish Trap / Video</b>                           | <b>Not on Initial Schedule</b>   |
| SEFSC   | Charter            | SouthEast Fishery-Independent Survey (SEFIS) - charter                         |  |
| SEFSC   | NOAA Vessel        | SEAMAP (Southeast Area Monitoring and Assessment Program) Fall Plankton Survey | NOAA Vessel Pisces   |
| SEFSC   | NOAA Vessel        | SEFSC Shark/Red Snapper Bottom Longline Survey                                 | NOAA Vessel Oregon II  |
| SEFSC   | NOAA Vessel        | SEAMAP Summer Groundfish   | NOAA Vessel Oregon II  |
| SEFSC   | NOAA Vessel        | SouthEast Fishery-Independent Survey (SEFIS) - NOAA ship                       | NOAA Vessel Pisces   |
| SWFSC   | Charter            | California Cooperative Fisheries Investigations (CalCOFI) Summer               |  |
| <b>SWFSC</b>  | <b>Charter</b>     | <b>Highly Migratory Species (HMS)</b>  | <b>Not Completed</b>   |
| <b>SWFSC</b>  | <b>NOAA Vessel</b> | <b>Juvenile Rockfish Survey</b>  | <b>NOAA Vessel Reuben Lasker, Completcd early -- Q3</b>  |
| SWFSC   | NOAA Vessel        | West Coast Pelagic Fish Survey   | NOAA Vessel Reuben Lasker  |
| Footnotes   |                    |  |  |

<sup>1</sup> NOAA Fisheries Science Centers include Alaska Fisheries Science Center (AFSC), Northeast Fisheries Science Center (NEFSC), Northwest Fisheries Science Center (NWFS), Pacific Islands Fisheries Science Center (PIFSC), Southeast Fisheries Science Center (SEFSC) and Southwest Fisheries Science Center (SWFSC).

\* Changes are highlighted in bold, red text

