



**Billing Code 3510-22-P**

**DEPARTMENT OF COMMERCE**

**National Oceanic and Atmospheric Administration**

**50 CFR Part 660**

**[Docket No. 141222999-7741-01]**

**RIN 0648-BE77**

**Fisheries Off West Coast States; Coastal Pelagic Species Fisheries Management Plan; Adjustments to the Pacific Sardine Harvest Guideline Control Rule**

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** Proposed rule.

**SUMMARY:** Under the framework procedures of the Coastal Pelagic Species (CPS) Fishery Management Plan (FMP), NMFS proposes to revise the FRACTION parameter of the Pacific sardine harvest guideline (HG) control rule to use a 3-year average of ocean temperature data from the California Cooperative Oceanic Fisheries Investigations (CalCOFI) survey that takes place off southern and central California, rather than temperatures measured from the end of the Scripps Institution of Oceanography (SIO) Pier, and revise the upper bound of fraction from 15 percent to 20 percent. These changes are intended to better reflect the best available science and to better conserve and manage the northern subpopulation of Pacific sardine off the U.S. West Coast managed under the CPS FMP.

**DATES:** Comments must be received by [*insert date 30 days after date of publication in the FEDERAL REGISTER*].

**ADDRESSES:** You may submit comments on this document identified by NOAA-NMFS-2015-0044 by any of the following methods:

- **Electronic Submissions:** Submit all electronic public comments via the Federal e-Rulemaking Portal. Go to *www.regulations.gov#!/docketDetail;D=NOAA-NMFS-2015-0044* , click the “Comment Now!” icon, complete the required fields, and enter or attach your comments.
- **Mail:** Submit written comments to Barry A. Thom, Regional Administrator, West Coast Region, NMFS, 7600 Sand Point Way NE., Seattle, WA 98115-0070; Attn: Joshua Lindsay.

**Instructions:** Comments must be submitted by one of the above methods to ensure that the comments are received, documented, and considered by NMFS. Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NMFS. All comments received are a part of the public record and will generally be posted for public viewing on *www.regulations.gov* without change. All personal identifying information (e.g., name, address, etc.), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. Do not submit confidential business information, or otherwise sensitive or protected information. NMFS will accept anonymous comments (enter "N/A" in the required fields if you wish to remain anonymous). Attachments to electronic comments will be accepted in Microsoft Word, Excel, or Adobe PDF file formats only.

**FOR FURTHER INFORMATION CONTACT:** Joshua Lindsay, West Coast Region, NMFS, (562) 980-4034.

**SUPPLEMENTARY INFORMATION:** The HG control rule, in conjunction with the overfishing limit (OFL) and acceptable biological catch (ABC) control rules in the FMP, are used to set annual harvest levels for the northern subpopulation of Pacific sardine (hereafter, simply Pacific sardine), in accordance with the Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. 1801 *et seq.* The HG formula for Pacific sardine is  $HG = [(Biomass-CUTOFF) * FRACTION * DISTRIBUTION]$  and was first established by Amendment 8 to the CPS FMP. FRACTION, expressed as a percentage, is dependent on oceanographic conditions, specifically ocean temperature, and is a proxy for  $E_{MSY}$  (the exploitation rate for deterministic equilibrium maximum sustainable yield (MSY)). The value used for FRACTION in the control rule is calculated annually and varies with water temperature (a higher fraction for warmer ocean temperatures and a lower fraction for cooler temperatures). The rationale for setting FRACTION in the HG in this manner is that the productivity of the sardine stock is correlated to ocean temperatures, with sardines being more productive during times of higher ocean temperatures. FRACTION under the FMP is currently bounded between 5 and 15 percent, meaning that although the calculated  $E_{MSY}$  estimate for any given year may be higher or lower, FRACTION is bounded and is never allowed to be higher than 15 percent or lower than 5 percent.

Since 1999, the formula prescribed in the FMP used for calculating FRACTION has been based on an average 3-year sea surface temperature measured at the SIO Pier

and an estimate of the relationship between Pacific sardine  $E_{MSY}$  and ocean temperatures of:

$$FRACTION = 0.248649805 T^2 - 8.190043975 T + 67.4558326$$

where T is the average three season sea surface temperature at SIO during the three preceding seasons.

In 2010, new research by scientists at the NMFS Southwest Fisheries Science Center (SWFSC) called into question the original relationship between SIO temperature and productivity used in the analysis to establish the existing FRACTION parameter and control rule in the FMP. In February 2013, the Pacific Fishery Management Council (Council) and the SWFSC convened a workshop to further examine the temperature-recruitment relationship used to inform FRACTION. The scientists at this workshop found that although a temperature-recruitment correlation based on SIO was still scientifically valid, a temperature index based on data from the California Cooperative Oceanic Fisheries Investigations (CalCOFI) survey (a compilation of temperatures measured throughout the southern California bight, from now on referred to as CalCOFI index) explained a more significant amount of sardine recruitment variability and success than the SIO index and was generally better aligned with ocean temperatures in the primary habitat of Pacific sardine (PFMC 2013).

Based on this new information, and a recommendation from their Scientific and Statistical Committee (SSC) that the CalCOFI index represented the best available science for Pacific sardine management, the Council adopted the use of the CalCOFI temperature index and a new temperature-recruitment relationship as follows:

$$E_{MSY} = 0.248649805 T^2 - 8.190043975 T + 67.4558326$$

This was adopted at their March 2014 meeting for use in the Pacific sardine OFL and ABC calculations and the Council stated their intent to also use the CalCOFI index in the calculation of the HG control rule, pending analysis on the impact of that change to the operation of the HG rule.

As a result of further analyses presented to the Council on the use of the CalCOFI index to calculate FRACTION, the Council, at their November 2014 meeting, adopted and recommended to NMFS, and NMFS is proposing through this action, that the HG control rule be modified in the FMP so that the CalCOFI index and revised  $E_{MSY}$  formula above be used in the calculation of the FRACTION. Additionally, the Council recommended, and NMFS is proposing through this action, that the upper bound on FRACTION is revised from 15 percent to 20 percent. These changes better reflect best available science as well as provide for better alignment with the existing function of the current HG rule by providing an improved representation of the CalCOFI temperature data and new knowledge regarding the productivity of Pacific sardine.

Adjusting the upper bound of FRACTION from 15 percent to 20 percent is an attempt to scale the bounds on FRACTION to better reflect the mid-range of actual temperature readings observed in the CalCOFI data, thereby aligning the CalCOFI temperatures and the new temperature- $E_{MSY}$  relationship in a manner more similar to the old SIO-based relationship and to where the 5 to 15 percent range fell relative to typical SIO temperatures, although still on the lower range. This distinction can be seen by looking at the median temperature and corresponding  $E_{MSY}$  for that temperature for both SIO and CalCOFI. The median of the observed SIO temperatures (16.98 degrees Celsius) equates to an  $E_{MSY}$  of 7 percent; thereby falling within the range of the

FRACTION bounds of 5 to 15 percent. The median of the observed CalCOFI temperatures (15.72 degrees Celsius) however equates to an  $E_{MSY}$  of 18 percent, which is above an upper FRACTION bound of 15 percent. Therefore, increasing the upper bound of FRACTION to 20 percent allows FRACTION to be more in line with typical CalCOFI temperatures. By keeping the upper bound of FRACTION at 15 percent while using the new temperature index and  $E_{MSY}$  relationship, FRACTION would rarely vary up or down because it would be bounded in the lower range of typical CalCOFI temperatures. This change to the upper bound of FRACTION is an attempt to maintain consistency with the original intent of the HG under the CPS FMP, which was to have a FRACTION parameter that varied based on the environmental conditions (i.e. temperature) experienced by the stock and to permit higher harvest rates to take advantage of periods when biomass and productivity are high, but still restrict harvest when biomass and productivity are low.

Additionally this revision mirrors an increase in the modeled stochastic estimate of MSY for Pacific sardine from 0.12 during the analysis for Amendment 8 to 0.18 (PFMC 1999 and PFMC 2014; Hurtado-Ferro and A. E. Punt.) when based on the updated analysis and the new simulation model developed to examine this action (Hurtado-Ferro and Punt 2013). This increase in the modeled stochastic MSY estimate reflects a statistically identified increase in the understanding of sardine productivity and the ability of the stock to withstand a higher average fishing rate. Additionally, results from the simulation model developed to examine the risks associated with the control rule and an assessment of changing to a new temperature recruit index showed that bounding FRACTION at 15 percent compared to 20 percent did not provide substantial

benefits to the sardine stock from a long-term population perspective or benefits to the ecosystem with regards to the amount of sardine left unharvested as potential forage for predators. However, increasing the upper bound to 20 percent is expected to result in a higher yield to the fishery over the long term.

### **Classification**

Pursuant to section 304(b)(1)(A) of the Magnuson-Stevens Fishery Conservation and Management Act, the NMFS Assistant Administrator has determined that this proposed rule is consistent with the CPS FMP, other provisions of the Magnuson-Stevens Fishery Conservation and Management Act, and other applicable law, subject to further consideration after public comment.

This proposed rule has been determined to be not significant for purposes of Executive Order 12866.

This proposed rule is not expected to be an EO 13771 regulatory action because this proposed rule is not significant under EO 12866.

The Chief Counsel for Regulation of the Department of Commerce certified to the Chief Counsel for Advocacy of the Small Business Administration that this proposed rule, if adopted, would not have a significant economic impact on a substantial number of small entities, for the following reasons:

The purpose of this rule is to use the best available science for calculating the FRACTION parameter in the Pacific sardine HG control rule under the CPS FMP and this is expected to result, over the long term, in harvest guidelines of a similar level to the status quo, except the sardine stock should be more robust, over the long term, because the control rule would use better science. This is accomplished by incorporating the use

of a new temperature index into the calculation that more accurately tracks sardine productivity and by revising the upper FRACTION bound to 20 percent.

For RFA purposes only, NMFS has established a small business size standard for businesses, including their affiliates, whose primary industry is commercial fishing (see 50 CFR 200.2). A business primarily engaged in commercial fishing (NAICS code 11411) is classified as a small business if it is independently owned and operated, is not dominant in its field of operation (including its affiliates), and has combined annual receipts not in excess of \$11 million for all its affiliated operations worldwide.

The small entities that would be affected by the proposed action are the vessels that harvest Pacific sardine as part of the West Coast CPS finfish fleet and are all considered small businesses under the above size standards. In 2014, there were approximately 81 vessels permitted to operate in the directed sardine fishery component of the CPS fishery off the U.S. West Coast: 58 vessels in the Federal CPS limited entry fishery off California (south of 39° N. lat.), and a combined 23 vessels in Oregon and Washington's state Pacific sardine fisheries. The average annual per vessel revenue in 2014 for the West Coast CPS finfish fleet was well below \$20.5 million; therefore, all of these vessels are considered small businesses under the RFA. .

The proposed action is not expected to have direct or indirect socioeconomic impacts, and, therefore, it is not expected to reduce profitability of the affected entities. This action does not establish specific harvest limits and does not change the general function of the existing control rule, both of which might influence ex-vessel revenue and personal income. Instead, the proposed action only updates the environmental indicator underlying the FRACTION parameter of the HG control rule and modifies the control

rule to reflect this new information. In general, the revised harvest control rule encompassing these changes is expected to produce similar quotas as the existing control rule.

The CPS FMP and its implementing regulations require NMFS to calculate annual harvest levels by applying the harvest control rule formulas, such as the HG rule, to the current stock biomass estimate. Therefore, if the estimated biomass decreases or increases from one year to the next, so do the applicable quotas. Under the proposed action, harvest levels will continue to vary from year to year, primarily driven by changes in sardine productivity and therefore changes in biomass. The proposed change to the temperature index that dictates the FRACTION parameter in the HG control rule simply ensures that the best available science is used when calculating the HG for Pacific sardine. This rule would also adjust the upper bound of FRACTION from 15 percent to 20 percent. The reason for this change is that a FRACTION that ranges from 5 percent to 20 percent better reflects the mid-range of actual measured temperatures and more closely aligns with CalCOFI temperatures in a manner similar to where the 5 to 15 percent range fell, relative to the existing temperature index.

Based on the analysis above, the proposed action, if adopted, will not have a significant economic impact on a substantial number of these small entities. As a result, an Initial Regulatory Flexibility Analysis is not required, and none has been prepared.

## **References Cited**

The complete citations for the references cited in this document can be obtained by contacting NMFS (see **ADDRESSES** and **FOR FURTHER INFORMATION CONTACT**).

**Authority:** 16 U.S.C. 1801 *et seq.*

Dated: August 17, 2017.

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Samuel D. Rauch, III,

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National Marine Fisheries Service.

[FR Doc. 2017-17820 Filed: 8/22/2017 8:45 am; Publication Date: 8/23/2017]