



DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 660

RTID 0648-XA797

Fisheries Off West Coast States; Coastal Pelagic Species Fisheries; Amendment 18 to the Coastal Pelagic Species Fishery Management Plan

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

ACTION: Notification of agency decision.

SUMMARY: On June 14, 2021, the Regional Administrator of the West Coast Region, NMFS, with the concurrence of the Assistant Administrator for Fisheries, approved Amendment 18 to the Coastal Pelagic Species Fishery Management Plan. Amendment 18 implements a rebuilding plan for the northern subpopulation of Pacific sardine, which NMFS declared overfished in June 2019.

DATES: The amendment was approved on June 14, 2021.

ADDRESSES: Copies of the Coastal Pelagic Species (CPS) Fishery Management Plan (FMP) as amended through Amendment 18, are available at the Pacific Fishery Management Council, 7700 NE Ambassador Place, Suite 101, Portland, OR 97220-1384, or at this URL; <https://www.pcouncil.org/coastal-pelagic-species/fishery-management-plan-and-amendments/>. The final Environmental Assessment (EA) prepared pursuant to the National Environmental Policy Act (NEPA) for Amendment 18 is available on NMFS' website at <https://www.fisheries.noaa.gov/west-coast/laws-and-policies/west-coast-region-national-environmental-policy-act-documents>.

FOR FURTHER INFORMATION CONTACT: Lynn Massey, Sustainable Fisheries Division, NMFS, at lynn.massey@noaa.gov or 562-436-2462; or Kerry Griffin, Pacific Fishery Management Council, at kerry.griffin@noaa.gov or 503-820-2409.

SUPPLEMENTARY INFORMATION: Amendment 18 expands Section 4.5 of the CPS FMP to include the rebuilding plan for Pacific sardine. There are no implementing regulations associated with Amendment 18, therefore NMFS did not promulgate proposed and final rules to implement this amendment.

NMFS published a Notice of Availability for Amendment 18 on March 16, 2021 (86 FR 14401), and solicited public comments through May 17, 2021. NMFS received five public comments in support of Amendment 18, one from a student and four from prominent fishing industry groups. The industry groups included the California Wetfish Producers Association, the West Coast Pelagic Conservation Group, the Sportfishing Association of California, and the West Coast Seafood Processors Association. NMFS received three public comments opposing Amendment 18, one from a private citizen and two from the environmental non-governmental organization Oceana. Oceana submitted two letters, one containing its public comment and the other containing a list of names that signed a petition campaigning against Amendment 18. NMFS summarizes and responds to the public comments below. NMFS responded to comments related to NEPA compliance in the final EA prepared for Amendment 18 (see **ADDRESSES**).

Comment 1: Oceana argues that by adopting the recommended management strategy for the rebuilding plan (Alternative 1 Status Quo Management) considered in the supporting EA for Amendment 18 (see **ADDRESSES**), NMFS is continuing failed policies that led to the overfished determination.

Response: This comment misunderstands the biology of Pacific sardine, the structure of the CPS FMP, and the extraordinary and precautionary measures that the Council has built into the framework for managing CPS. Pacific sardines are well known

to experience dramatic swings in abundance in response to environmental conditions, even in the absence of fishing pressure. The recent population decline of Pacific sardine appears to be due to poor recruitment. Specifically, the Southwest Fisheries Science Center's (SWFSC) 2020 stock assessment states that recruitment has declined since 2005-2006 except for a brief period of modest recruitment success in 2009-2010, with the 2011-2018 year-classes being among the weakest in recent history. Such declines in population are by no means unprecedented. The Pacific sardine has undergone large population fluctuations for centuries even in the absence of industrial fishing as evidenced by historical records of scale deposits. Although this decrease in biomass triggered the requirement to declare the stock overfished, overfishing has never occurred for this stock, as Pacific sardine catch has been well below both the acceptable biological catch (ABC) and the overfishing limit (OFL) in every year.

Most stocks managed under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) are managed with the goal of maintaining a fixed biomass level and use a constant exploitation rate to achieve that management goal. This is not the case for Pacific sardines, which as stated above, are well known to experience dramatic swings in abundance in response to environmental conditions and in the absence of fishing pressure. In addition, Pacific sardine are important forage species and play a critical role in the marine ecosystem. Accordingly, management for Pacific sardine does not rely on a fixed exploitation rate or a single set of management measures. Instead, the Council has crafted a management framework that does two critical things: 1) the harvest control rule incorporates the stock's current levels of productivity to adjust the exploitation rate based on whether the stock is experiencing high or low recruitment, and 2) implements stringent management measures as soon as the stock exhibits signs that it is entering a significant downswing in biomass. With respect to this latter element, the FMP takes the very precautionary step of mandating a closure of the primary directed

fishery, when the stock reaches 150,000 metric tons (mt), a level three times higher than the overfished threshold. The primary directed fishery is the main driver of fishing mortality for Pacific sardines and its closure creates an automatic reduction in removals, even in the absence of changes to the annual catch limit (ACL). This FMP provision has kept the primary directed fishery closed since 2015 (7 years so far), which was 4 years before the stock was even declared overfished. In addition, when the stock reached its overfished level of 50,000 mt in 2019, the FMP automatically required a reduction on incidental catch limits of Pacific sardines in other CPS fisheries from 40 percent to 20 percent, which also has major impacts on fishing mortality. The FMP explicitly acknowledges that this framework could constitute a rebuilding plan without further adjustment. The Magnuson-Stevens Act provides Councils with 2 years to develop a rebuilding plan once a stock is declared overfished (a process which itself takes several months). Sometimes, if a Council fails to develop a rebuilding plan and NMFS must develop and implement its own plan, it can take more than 2 years to implement a plan. The Council took the extraordinary step to anticipate population fluctuations for this cyclical stock and not wait to respond to low productivity and decreasing stock size. Instead, the Council automatically implemented provisions that would be found in a rebuilding plan as soon as the stock passed certain biomass thresholds. This represents an extremely precautionary approach to management.

Comment 2: Oceana claimed that Amendment 18 violates the Magnuson-Stevens Act because the recommended management strategy for the rebuilding plan (Alternative 1 Status Quo Management) considered in the supporting EA for Amendment 18 (see **ADDRESSES**) does not provide at least a 50 percent probability of rebuilding the stock within the modeled rebuilding timeframe (through 2050). Relevant to this, Oceana also claims that NMFS did not use the best scientific information available for evaluating the effects Alternative 1 Status Quo Management in the EA. Furthermore, Oceana claims

that NMFS mischaracterizes Alternative 1 Status Quo Management to achieve a particular conclusion.

Response: NMFS has determined that the information and analysis used to determine a rebuilding timeline based on status quo management is supported by the best scientific information available and that status quo management has not been mischaracterized for a specific outcome. To support their claim, Oceana highlights the results of the preliminary model run for Alternative 1 Status Quo Management provided in the SWFSC's Pacific Sardine Rebuilding Analysis (Appendix A of the EA), which had an output that the stock would not rebuild before 2050. However, NMFS does not rely on these initial modeling results because they do not realistically reflect the biological impacts that would result from management under Alternative 1 Status Quo Management. Instead, NMFS relied on several sources of information when selecting T_{target} (*i.e.*, the target rebuilding time frame). First, additional modeling results using a 2,200 mt constant catch level predict that the stock has at least a 50 percent chance of rebuilding in 17 years, only one year later than the 16 years predicted under Alternative 3 (Five Percent Fixed U.S. Harvest Rate). Second, both rebuilding timelines under Alternative 1 and Alternative 3 are likely overestimated by the modeling results since both alternatives do not account for the fact that in recent years only a small portion of the already-small U.S. Pacific sardine landings are from the northern subpopulation of Pacific sardine (*i.e.*, the population managed under the CPS FMP), with a greater proportion coming from the southern subpopulation. Third, NMFS took into account the biology of the sardine stock and its changing productivity based on ocean conditions. In addition, Alternative 1 Status Quo management allows the stock to rebuild on a similar timeline as Alternative 3, but also prevents further economic harm to the fishing industry, which has already been declared a Federal disaster since 2015 when NMFS closed the primary directed fishery. NMFS believes that the stock has at least a 50 percent chance

of rebuilding by the Council's recommended T_{target} of 14 years (reduced from the modeled 17 years for 2,200 mt constant catch to account for the fact that only a small portion of the 2,200 mt is from the northern subpopulation, discussed more further below).

When analyzing the effects of Alternative 1 Status Quo Management, NMFS relied on several sources of information to support its conclusion. These are not separate characterizations of the alternative, as the comment suggests. Instead, NMFS recognized that the model available was not capable of capturing all aspects of the Pacific sardine stock and that other sources of information should be used to evaluate the alternatives and select rebuilding criteria, including the additional model results for a constant catch of 2,200 mt (intended to represent expected average catch by fishery during the rebuilding period), the mixed stock composition of Pacific sardine landings, and the biology of the sardine stock and its changing productivity based on ocean conditions. The initial model run calculated rebuilding probabilities as though the full ABC is harvested, which has never been the case due the non-discretionary harvest restrictions already in place pursuant to the CPS FMP that purposefully restrict the fishery from catching the full ABC. These include the continued closure of the primary directed fishery (*i.e.*, the largest fishery that takes the majority of Pacific sardine catch) and restrictions on incidental harvest of Pacific sardine in other CPS fisheries (which are currently less than half of typical incidental limits). Therefore, although NMFS is required to set an OFL and ABC every year for Pacific sardine, those reference points have not been the drivers for annual catch levels. Instead, removals of Pacific sardine are driven by the management measures required by the FMP and included in this rebuilding plan. Therefore the Council and NMFS determined that analyzing removals at the level of the ABC would be inaccurate and fail to realistically evaluate the effectiveness of the rebuilding plan management strategies and their effects on fishing communities. The

results of the final model run (*i.e.*, 2,200 mt constant catch) that the Council and NMFS find more representative of Alternative 1 Status Quo Management projects that the stock has at least a 50 percent chance of rebuilding in 17 years, which is in between the Council's recommended T_{\min} of 12 years and T_{\max} of 24 years.

NMFS' determination that 14 years is the time period that is as short as possible while taking into account the factors set forth by the Magnuson-Stevens Act, including the biology of the stock and the needs of fishing communities, was further informed by the stock composition of the removals counted against the ACL and included in the 2,200-mt average. There are two stocks of Pacific sardine that can occur off the U.S. West Coast, known as the northern subpopulation and the southern subpopulation. The northern subpopulation is the dominate stock off the U.S. West Coast, is the stock managed in the CPS FMP, and is the stock that is overfished and will be managed under this rebuilding plan. The southern subpopulation usually resides off the coast of Mexico, however in the summer months it usually migrates north into waters off southern California. Although the southern subpopulation prefers warmer water than the northern subpopulation, meaning the two subpopulations generally inhabit different geographic ranges, they do typically mix in the summertime and it is impossible to distinguish between the subpopulations at the time of landing. Therefore, in an abundance of caution, NMFS counts all landed Pacific sardine against the ACL (which is set based on the biomass of the northern subpopulation only), regardless of which subpopulation they might belong to. Since the closure of the primary Pacific sardine fishery, the remaining small levels of catch of Pacific sardine have occurred in the summertime when the southern subpopulation is mixing with the northern subpopulation in the Southern California Bight. Post-season reconstruction, for purposes of assigning landings in stock assessments, has demonstrated that in recent years, only 472 mt on average of the 2,200-mt average catch are assumed to be from northern subpopulation. The Council

recognized, therefore, that the modeled 2,200 mt was significantly overestimating the impact of the fishery on the northern subpopulation and adjusted the T_{target} accordingly. NMFS notes that the rebuilding timeline under Alternative 3 is also likely overestimated for the same reasons, however this does not change the fact that the modeling shows Alternative 3 only rebuilding slightly faster than Alternative 1.

Comment 3: Oceana claims that harvest levels allowed under Alternative 1 Status Quo Management will not allow the stock to rebuild because the sea surface temperature index used to calculate the E_{MSY} parameter (*i.e.*, the exploitation rate at maximum sustainable yield) in the OFL harvest control rule causes the OFL, and hence other harvest specifications, to be inflated. Oceana supports this claim by citing recent Council documents and a 2019 scientific paper from NMFS' SWFSC that indicates that the Pacific Decadal Oscillation is a better predictor of sea surface temperature than the currently used 3-year average of California Cooperative Fisheries Investigation (CalCOFI) sea surface temperature measurements. Relevant to this, Oceana claims that NMFS should calculate E_{MSY} based on the mean E_{MSY} from recent stock assessments rather than the 3-year average of CalCOFI sea surface temperature measurements.

Response: Changing how E_{MSY} is calculated is outside the scope of this action, however NMFS would still like to provide a response to this comment. NMFS is aware of the scientific publications and ongoing Council discussions related to E_{MSY} , and is committed to participating in these ongoing discussions about new science and whether that new science justifies a change for how E_{MSY} is calculated for management purposes. Regarding recent Council discussion: the Council's Scientific and Statistical Committee (SSC), which is the scientific advisory body responsible for recommending changes to E_{MSY} , has the ability to recommend changes to E_{MSY} at any time. The Council's SSC has not done this since 2014 when they recommended that NMFS switch from using the 3-year average of Scripps Institution of Oceanography sea surface

temperature measurements to using the 3-year average of CalCOFI sea surface temperature measurements to inform E_{MSY} . During this time, NMFS used a static E_{MSY} of 18 percent that was produced by a management strategy evaluation. The implementation of Status Quo Management during the rebuilding period for Pacific sardine will not supersede the ability to change E_{MSY} if and when a recommendation from the Council is made. Regarding the recent 2019 paper from the SWFSC: research regarding the appropriate temperature index to inform E_{MSY} is ongoing, and the SWFSC has not yet determined whether a change in how E_{MSY} is calculated is necessary for management purposes based on this publication. The best predictor of sea surface temperature will likely change with time as equilibrium ocean conditions shift with climate change. The recent 2019 paper highlights new sea surface temperature-sardine recruitment relationships, however it does not actually provide a new method to calculate E_{MSY} for management purposes. NMFS and the SWFSC will continue to collaborate on whether this new publication warrants a change in management. If a change is determined to be necessary, NMFS will promulgate a new action that will go through the proper Council process and will include public input during the Council process and during NMFS' subsequent rulemaking process.

Comment 3: Oceana stated that NMFS must base its analysis on a productivity scenario representing the best known long-term boom and bust dynamics of the sardine population. Oceana points out several shortcomings of the Rebuilder tool that was used to analyze rebuilding timelines under certain management alternatives, including the fact that it analyzes a limited range of years for recruitment scenarios.

Response: NMFS acknowledges and agrees that the boom and bust dynamics of Pacific sardines are critical to analyzing rebuilding for this stock. Consideration of this biological characteristic of the stock was an important part of NMFS' analysis. The Council analyzed two productivity scenarios for each management alternative. The

model used data inputs from the 2020 benchmark stock assessment that covers the time period 2005-2020. The two modeled time periods, 2005-2018 and 2010-2018, were chosen to represent different levels of potential future productivity (*i.e.*, recruitment scenarios) for this stock. Each of these productivity scenarios was also analyzed with two Mexican harvest scenarios including a fixed tonnage (6,044 mt) and a fixed rate (9.9 percent of Pacific sardine biomass). The Council's CPS Management Team chose to include only the modeling results for the 2005-2018 productivity scenario as part of its rationale for its recommendations because this time period represents a broader range of recruitment observed for this stock than the modeled subset of years 2010 to 2018, which include only years with low Pacific sardine productivity. The modeling results for 2010-2018 also provided a relatively low spawning stock biomass target (*i.e.*, the model's estimated rebuilding target under this productivity scenario) of only 38,122 mt, which is less than the overfished threshold of 50,000 mt in the CPS FMP. As a result, the CPS Management Team determined that the model results from the low productivity scenario do not adequately represent the fluctuating Pacific sardine population, and therefore relied on analysis of the model results for the moderate productivity scenario when developing management alternatives. The decision was also made to consider the modeling runs based on the fixed rate assumption for Mexico versus a fixed catch level on the presumption that it is reasonable to assume Mexican catch might go up and down based on stock size. Despite the model's limitations (discussed above in the response to Comment #2), it is the best model available to project Pacific sardine biomass forward in time, taking into account recruitment, fishing mortality, etc. and was an appropriate source of information for NMFS to rely on when reaching its decision. Furthermore, the Council's SSC endorsed the use of the model for this purpose.

However, NMFS acknowledges the limitations of the model and took that into account in reaching its decision by relying on other sources of information to inform its

decision. When evaluating the Council's recommendation, NMFS took several other aspects into consideration, including the basic biology and life history of Pacific sardine estimates of its large population fluctuations over thousands of years, and the history of the Pacific sardine fishery on the west coast of North America. One of the primary drivers of Pacific sardine biology that the model cannot take into account is the wider-scale oceanographic conditions that drive Pacific sardine recruitment. There is no model that exists that can accurately predict when ocean conditions will ultimately allow for more favorable Pacific sardine recruitment. NMFS understands these limitations and explained the caveats of the modeling results and analyzed them holistically with other non-model based considerations. NMFS notes that the shortcomings of the Rebuilder Tool and the SWFSC's resulting Pacific Sardine Rebuilding Analysis highlighted by Oceana apply to all of the alternatives analyzed.

Comment 4: Oceana claims that NMFS must establish a rebuilding biomass level target consistent with the long-term B_{MSY} (*i.e.*, the biomass at maximum sustainable yield) from previous management strategy evaluations. In addition to a 2014 management strategy evaluation, Oceana also cites a value from a 2012 SWFSC scientific paper for consideration of a B_{MSY} . Relevant to this, Oceana also claims that the proposed B_{MSY} of 150,000 mt age 1+ biomass in Amendment 18 is too low because below that threshold, the primary directed fishery for Pacific sardine is prohibited from operating.

Response: NMFS has determined that the established rebuilding target is supported by the best scientific information available and represents a level consistent with producing the maximum sustainable yield under prevailing environmental conditions. Because Pacific sardine biomass fluctuates drastically with prevailing oceanographic conditions, B_{MSY} also fluctuates with the stock's productivity. This is why so many values that could potentially be used for B_{MSY} exist in relevant literature, and

also why the Council and NMFS have never explicitly defined a single B_{MSY} reference point for Pacific sardine. The two values that Oceana implies NMFS should consider using for B_{MSY} are based on older stock assessment data. In recommending a rebuilt level of 150,000 mt age 1+ biomass, the Council and NMFS used the most recent data from the 2020 Pacific sardine stock assessment which includes the recent decline in the population and recent low recruitments. The Council's SSC endorsed using the 2020 stock assessment and the model for this purpose.

Regarding Oceana's claim that 150,000 mt age 1+ biomass is too low because it represents a level where "the population is too low to support a commercial fishery," the comment misunderstands the structure of the CPS FMP and the precaution built into its framework. The Council chose a "CUTOFF" threshold at which it would automatically close the primary directed fishery not because the stock could not support a fishery at that level, but in order to provide additional protections to the stock as biomass began decreasing in response to environmental conditions. This CUTOFF threshold is part of the optimum yield considerations built into the Pacific sardine harvest guideline control rule. A stock on an upward trend does not require the same safeguards. In addition, NMFS notes that the CUTOFF value is three times the overfished biomass level, demonstrating both how precautionary the automatic closure level is and that it represents the level at which the stock will produce maximum sustainable yield. Additionally, when developing a rebuilding plan it is important to consider the current environmental and/or reproductive conditions the stock is experiencing, which is why the model used to project rebuilding timelines used the most recent stock assessment. Although history and science have shown that the Pacific sardine population can recover quickly when conditions are favorable, as previously stated it is unknown when those conditions will change. If the modeling analysis to determine an appropriate rebuilt level or the rebuilding plan included high biomass levels and high recruitment levels witnessed in the past as

suggested by Oceana, then the model could potentially over assume the level of catches that could occur for rebuilding.

Comment 5: Oceana claims that NMFS fails to use the best scientific information available on international catch levels in its consideration of Amendment 18. Specifically, Oceana claims that the Distribution parameter in the Pacific sardine harvest control is inconsistent with recent high catch levels by Mexico published in the 2020 Pacific sardine stock assessment.

Response: NMFS notes that changes to the management framework of Pacific sardine and to the Pacific sardine harvest control rules are set in the CPS FMP and are beyond the scope of this rulemaking. However, NMFS would like to respond to this comment.

The value for the Distribution parameter in the Pacific sardine harvest control rules has recently been reviewed. In 2015, a 3-day meeting was held that included agency and non-agency scientists to review the Distribution parameter. The results of this workshop were then presented to the Council and its advisory bodies, including the SSC. The Council subsequently concluded that there was no superior data to inform this parameter. Additionally, NMFS notes that the Distribution parameter in the various Pacific sardine control rules is not a required element dictated by the Magnuson-Stevens Act or National Standard 1. Instead, it is an additional precautionary policy adopted and used by the Council to further reduce the harvest of Pacific sardine beyond what is required. Amendment 18 does not supersede the Council's ability to recommend a change to the Distribution parameter if and when they deem it necessary.

Comment 6: Oceana claims that NMFS has not, and therefore must analyze the effects of each alternative on essential fish habitat (EFH) for salmon, groundfish, and highly migratory species.

Response: NMFS notes that this action is a rebuilding plan intended only to continue limiting fishing mortality in order to allow the Pacific sardine population to rebuild. The closure of the primary directed fishery is maintained through this action. There are no anticipated impacts to EFH that have not already been considered in prior EFH consultations on the Pacific sardine fishery, even when the primary directed fishery was open. Only the smaller sectors of the fishery with very limited take of Pacific sardine (*e.g.*, the live bait fishery) would occur under Amendment 18, as the primary directed fishery will remain closed until the stock reaches its rebuilding target.

Comment 7: Oceana claimed that NMFS has not adequately consulted on the potential effects from Amendment 18 on Endangered Species Act (ESA)-listed predators, and that NMFS must reinitiate an ESA consultation for this action.

Response: Oceana did not introduce any new scientific information that would require NMFS to reinitiate consultation under the ESA. Prior ESA consultations on the Pacific sardine fishery concluded that there would be no significant impact to ESA-listed species, and those consultations analyzed effects when the primary directed fishery was open. Amendment 18 maintains the closure of the primary directed fishery and only allows a very limited amount of take for the remaining small sectors of the fishery. As it relates to this action, potential impacts to species listed under the ESA would be if this action somehow changed the type of gear used by the fishery, or the timing or location of fishing. This action does not do any of those things.

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

Dated: June 14, 2021.

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