

## NATIONAL MARINE FISHERIES SERVICE (NMFS) REPORT ON HIGHLY MIGRATORY SPECIES (HMS) ACTIVITIES

During the September 2018 Council meeting, the National Marine Fisheries Service (NMFS) provided the Council with a list of 2017 and 2018 stock assessments conducted by science providers to the Pacific regional fishery management organizations (RFMOs) for the various management unit species in the Fishery Management Plan for U.S. West Coast Highly Migratory Species (HMS FMP), and indicated specific estimates considered for the purposes of determining best scientific information available (BSIA) (see [Agenda Item H.4, NMFS Report 1](#)). At that time, status determinations based on the new information were pending for several species, including bigeye and yellowfin tuna in the eastern Pacific Ocean (EPO) and Pacific bluefin tuna. The Highly Migratory Species Management Team (HMSMT) indicated concern for the status of these stocks based on the estimates in the NMFS Report (see [Agenda Item H.4, HMSMT Report](#)).

On September 25, 2018, NMFS West Coast Region (WCR) received the Southwest Fishery Science Center's (SWFSC) determination of BSIA for the purposes of judging the status of bigeye and yellowfin tuna in the EPO and Pacific bluefin tuna, and for use in managing fisheries that catch fish from these stocks. Following, and in accordance with NMFS' Procedure 01-101-09, the WCR and the Office of Sustainable Fisheries Domestic Fisheries Division (located in Silver Spring, MD) recommended that the Assistant Administrator of NMFS concur with the following status determinations for these stocks:

- Bigeye tuna in the EPO continues to be not subject to overfishing and not overfished based on the 2017 assessment.
- Yellowfin tuna in the EPO is now subject to overfishing, but not overfished based on the 2018 assessment.
- Pacific bluefin tuna continues to be overfished and subject to overfishing, based on the 2018 assessment.

### **BASIS FOR STOCK STATUS DETERMINATIONS**

The HMS FMP sets forth status determination criteria to determine potential overfishing and overfished status for fish stocks. The maximum fishing mortality threshold (MFMT) is used to determine an overfishing status and a minimum stock size threshold (MSST) is used to determine an overfished status.  $MSST = cB_{MSY}$  where  $c$  is 1 minus the natural mortality rate ( $M$ ) or 0.5, whichever is greater, and  $B_{MSY}$  is the biomass needed for maximum sustainable yield. Expressed as a ratio, a stock is overfished when  $B_{year}/B_{MSY} < \text{the greater of } 1-M \text{ or } 0.5$ . NMFS uses estimates of spawning biomass (SSB) in determining stock status whenever possible per NMFS National Standard 1 guidelines at 50 CFR 600.310(e)(i)(C). Overfishing occurs when fishing mortality ( $F$ ) exceeds the fishing mortality rate that produces MSY ( $F_{MSY}$ ) for a period of one year or more. Expressed as a ratio, the MFMT for the stock is exceeded when  $F_{year}/F_{MSY} > 1.0$ .

### **Bigeye tuna in the EPO**

NMFS concluded that the 2018 stock assessment produced by the Inter-American Tropical Tuna Commission (IATTC) Scientific Staff does not represent BSIA for purposes of determining stock

status and management. This determination is consistent with the conclusions of the Scientific Advisory Committee to the IATTC. The IATTC Scientific Staff also produced an indicator analysis, which suggests that the stock is under increasing fishing pressure, especially from the floating object fishery. While NMFS considers the indicator analysis to be BSIA, the results do not provide the information required by the HMS FMP for making a status determination. Thus, the status of bigeye tuna continues to be based on the 2017 stock assessment.

The IATTC Scientific Staff completed the 2017 stock assessment using data through 2017, which supported a determination that the stock was not subject to overfishing and not overfished. The 2017 stock assessment used the Stock Synthesis v. 3.23b model. Based on the domestic status determination criteria, bigeye tuna was determined to be not subject to overfishing because the fishing mortality rate was less than the MFMT ( $F_{2014-2016}/MFMT = 0.87$ ; only the ratio was calculated) and not overfished because the stock size ( $SSB_{2017} = 118,523$  metric tons (mt)) was greater than MSST ( $MSST = 48,130$  mt).

### **Yellowfin tuna in the EPO**

NMFS concluded that the BSIA comes from an assessment completed in 2018 by the Scientific Staff of the IATTC. The 2018 assessment was an update using data through 2017 and the same model as the 2017 assessment (Stock Synthesis v 3.23b). NOAA's SWFSC participated in the review of the assessment via the IATTC's Scientific Advisory Committee.

The results of the 2018 IATTC assessment support NMFS' determination that the yellowfin tuna stock in the EPO is not overfished, but is subject to overfishing. The assessment supports a determination that yellowfin tuna is subject to overfishing because the fishing mortality rate ( $F$  proxy =  $1-SPR_{2015-2017} = 1.01 F_{MSY}$ ) is greater than MFMT ( $MFMT = F_{MSY}$ ) and not overfished because stock size ( $S_{2017} = 3,925$  mt;  $S$  is a unitless index of spawning biomass) is greater than MSST ( $MSST = 1,817$  mt).

### **Pacific bluefin tuna**

NMFS concluded that BSIA for bluefin tuna comes from an assessment using data through 2016 and completed in 2018 by the Pacific Bluefin Tuna Working Group of the International Scientific Committee for Tuna and Tuna-Like Species in the North Pacific Ocean (ISC). The 2018 assessment was an update, and used the same model as the 2016 assessment. This assessment was reviewed and approved by the ISC Plenary, in July 2018. NOAA's SWFSC participated in the review of the assessment.

The 2018 stock assessment used the Stock Synthesis v. 3.24f model. Internationally, no limit reference points for Pacific bluefin tuna have been formally agreed upon by the RFMOs. Based on domestic status determination criteria, Pacific bluefin tuna is subject to overfishing because the fishing mortality rate ( $F$  proxy =  $1-SPRF_{2015-2016} = 0.921$ ) is greater than MFMT ( $MFMT = 0.81$ ) and overfished because stock size ( $SSB_{2016} = 21,331$  mt) is less than MSST ( $MSST = 101,905.5$  mt).

## **COUNCIL CONSIDERATIONS**

NMFS decided to send formal notice to the Council regarding obligations to make recommendations under either Section 304(i) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) for yellowfin tuna in the EPO, but decided not to send a formal notice regarding Council obligations to make recommendations for bigeye tuna in the EPO or Pacific bluefin tuna. Section 304(i) of the MSA requires the appropriate Council to make domestic and international recommendations “after the Secretary determines a fishery to be overfished or approaching a condition being overfished due to excessive international fishing pressure, and for which there are no management measures to end overfishing under an international agreement to which the United States is a party.” Paragraph 304(e)(1) explains that a fishery is classified as “approaching a condition of being overfished if, based on trends in fishing effort, fishery resource size, and other appropriate factors, the Secretary estimates that the fishery will become overfished within two years.” However, regulations at 600.310(j)(1) require NMFS to notify the Council if overfishing is occurring. Additionally, NMFS interprets “no management measures” to mean the absence of management measures that are adequate to stop overfishing for purposes of the MSA and its implementing regulations.

### **Bigeye tuna in the EPO**

The status of bigeye tuna in the EPO continues to be not overfished and not subject to overfishing based on the 2017 stock assessment. Therefore, the Council is not obligated to make recommendations under either Section 304(e) or Section 304(i) of the MSA.

### **Yellowfin tuna in the EPO**

The stock of yellowfin tuna in the EPO is subject to overfishing; however, recent fishing mortality was estimated to be only slightly higher than  $F_{MSY}$  (i.e.,  $F_{2014-2016} / F_{MSY} = 1.01$ ). Furthermore, biomass in recent years was estimated to be more than double MSST, and greater than  $B_{MSY}$ . Therefore, the stock is unlikely to be “approaching an overfished condition.” Nonetheless, regulations at 600.310(j)(1) require NMFS to notify the Council if overfishing is occurring. Because yellowfin tuna in the EPO is subject to overfishing due to excessive international fishing pressure, MSA Section 304(i) applies.

### **Pacific bluefin tuna**

Pacific bluefin tuna is overfished due to excessive international fishing pressure. While existing management measures may not be adequate to stop overfishing for purposes of the MSA and its implementing regulations, the United States recently agreed to international measures for rebuilding the stock, which NMFS will implement under authority of the Tuna Conventions Act in 2019. Given this, and taking into account previous actions and recommendations of the Council towards rebuilding of the Pacific bluefin tuna stock, NMFS does not regard additional Council action at this time as necessary to address the continued overfished and subject to overfishing status. Based on that assertion, and consistent with NMFS’ Procedure 01-101-09, the WCR decided not to send formal notification to the Council triggering obligations for recommendations under Section 304(i) of the MSA.

However, this decision does not preclude the Council from making additional domestic or international recommendations, or both, for ending overfishing and rebuilding the stock. Should the Council have an interest in doing so, NMFS encourages consideration of previously implemented and existing measures, as well as recently adopted international resolutions to which the United States is a party.

### ***Previous and Existing Management Measures***

In response to the overfished and subject to overfishing status of the Pacific bluefin tuna stock, the IATTC, in 2014, further constrained catch limits for the United States and Mexico in 2015 and 2016 to aid in rebuilding of the stock. For U.S. vessels, NMFS implemented the catch limits, along with recommendations from the Council for appurtenant regulations, such as trip limits in metric tons for commercial vessels, and bag limits in numbers of fish for recreational vessels. These restrictions on U.S. catch met the nation's obligations under IATTC Resolution C-14-06 to reduce catches commensurate with RFMO-scientists' conservation advice for carrying out the objective of rebuilding the stock.

Following an ISC assessment of Pacific bluefin tuna in 2016, which served as the basis for a continued overfished and subject to overfishing stock status determination, the IATTC extended the catch limits specified for 2015 and 2016 into 2017 and 2018 (IATTC Resolution C-16-08). Because 2014 was the terminal year of the 2016 assessment, the results of that assessment did not capture any effects of the more stringent management measures in place for 2015 and 2016. Thus, NMFS determined that additional Council action was not necessary and did not formally notify the Council to take additional action under Section 304(i) of the MSA at that time. However, the Council did provide input regarding implementation of management measures for the commercial fleet for 2017 and 2018. NMFS then implemented catch and trip limits for U.S. commercial vessels for 2017 and 2018 under the authority of the Tuna Conventions Act as the 2015-2016 implemented measures had expired. During 2017, both the United States and Mexico exceeded their respective commercial catch limits. However, in 2018, NMFS implemented additional measures, under the Tuna Conventions Act, to prevent U.S. vessels from exceeding its biennial limit in the Resolution C-16-08.

Implemented under the MSA, based on recommendation of the Council, the recreational bag limit regulations do not expire. However, the existing restrictions on U.S. commercial catch of Pacific bluefin tuna in the EPO are set to expire December 31, 2018.

### ***Recent International Resolutions***

In August 2018, the IATTC adopted Resolution C-18-01, which establishes catch limits for member nations (including Mexico and the United States) for 2019 and 2020. As in previous years, the two-year catch limit for the United States in C-18-01 is set at 600 mt, combined, and not to exceed 425 mt in any one year. The Resolution also states that any country's over-harvest from the 2017-2018 biennial limit shall be deducted from its combined catch limit, and that any country's under-harvest from the 2017-2018 biennial limit may be added to its combined catch limit. The IATTC also adopted Resolution C-18-02 in August 2018, amended Resolution C-16-08 to establish the framework for the over- and under-harvest provisions, including that the amount of under-harvest potentially added to subsequent catch limits shall not exceed 5 percent of the

initial catch limit. Resolution C-18-01 also requires semi-annual reporting of sport fishing catches, along with other reporting and data assessment criteria. The IATTC Scientific Staff did not recommend additional measures because the measures established in Resolution C-16-08 were considered adequate to meet the rebuilding targets recommended by the Joint IATTC-Western and Central Pacific Fisheries Commission (WCPFC) Northern Committee (NC) Working Group and adopted by the IATTC and WCPFC (these rebuilding targets are discussed below with respect to Resolution C-18-02).

As mentioned above, NMFS is preparing regulations to implement in 2019 for the purposes of meeting U.S. obligations under Resolution C-18-01 and C-18-02. In doing so, NMFS acknowledges the recommendations that the Council provided during its September 2018 meeting regarding domestic regulations (e.g., further restraining annual catch under the biennial catch limit in Resolution C-18-01, reducing trip limits, and including additional reporting requirements). NMFS welcomes any further input the Council may wish to offer towards addressing the relative impact of U.S. vessels in an effort to end overfishing and rebuilding the Pacific bluefin tuna stock.

With respect to ending international overfishing and achieving Pacific-wide rebuilding, IATTC Resolution C-18-02 set forth long-term rebuilding targets, including: (1) achieving an initial target of median SSB for the years 1954-2014 ( $SSB_{1954-2014}$ ) by 2024 with 60 percent probability, and (2) achieving a second target of 20%  $SSB_{F=0}$  within 10 years of reaching the initial rebuilding target or by 2034, whichever is earlier, with at least 60 percent probability. Considered as a proxy for  $B_{MSY}$ , the United States encouraged the adoption of the second rebuilding target. While the IATTC Scientific Staff considered measures in C-16-08 (which are consistent with those of C-18-01) adequate for meeting rebuilding targets, the Scientific Advisory Committee to the IATTC recommended taking note of the current status of the stock, differing impacts of harvest of small versus large Pacific bluefin tuna, and of the increased risks of not achieving rebuilding targets if catch limits are increased. This advice was premised on the projections from the 2018 stock assessment, which suggests that the spawning stock will reach the initial rebuilding target set for 2024 with a 98 percent probability, and will reach the second rebuilding target within 10 years after reaching the first rebuilding target or by 2034 with a 96 percent probability. While these probabilities are higher than those specified in Resolution C-18-02, the projection results are sensitive to the inclusion of a relatively high, but uncertain, recruitment estimate for 2016. Additionally, SSB at the initial rebuilding target is substantially higher than the SSB estimate for 2016.