HIGHLY MIGRATORY SPECIES MANAGEMENT TEAM REPORT ON FISHERY MANAGEMENT PLAN AMENDMENT 4: STATUS DETERMINATION CRITERIA FINAL ACTION

In its June report (Agenda Item H.2.a, Supplemental HMSMT Report 2), the Highly Migratory Species Management Team (HMSMT) proposed changes to Highly Migratory Species (HMS) Fishery Management Plan (FMP) Section 4.2 to more accurately reflect how the HMS status determination process uses the output of international assessments to meet Magnuson-Stevens Act (MSA) requirements. At their August 8-10, 2017, meeting in La Jolla, California, the HMSMT discussed modifying the proposed revisions to better explain the roles of National Marine Fisheries Service (NMFS), the Scientific and Statistical Committee (SSC), the HMSMT, and the Council in stock status determination and to align this section with the revisions to the biennial management cycle in Section 5.0 which the Council adopted at their June 2017 meeting. The new version of proposed changes is provided in an appendix relative to the version of the HMS FMP adopted for public review at the June 2017 Council meeting.

The HMSMT discussed the purpose and need for the proposed changes. Guidelines under MSA National Standard 2 require that conservation and management measures to rely upon the best scientific information available (BSIA). The process for determining BSIA for HMS stock status determinations differs significantly from that used for other Council-managed stocks where managing fishing effort, reviewing stock assessments, and defining management objectives are largely or fully within the scope of Council jurisdiction. HMS assessments are conducted by teams of regional fishery management organization (RFMO) science providers, which may include scientists from the United States (U.S.) and other participating nations in Pacific HMS fisheries or international science providers who work at RFMOs. Alternative peer review processes are used to determine whether the output of these international HMS assessments constitute BSIA (81 FR 54561; August 16, 2016), consistent with BSIA determination for most U.S.-targeted stocks subject to international agreements. NMFS uses assessment outputs which meet the BSIA standard to determine stock status, following the criteria in the HMS FMP.

The description of the status determination process for HMS stocks in the current HMS FMP does not account for the fact that the HMS management unit species stocks are internationally assessed and that the assessments are not routinely subject to SSC review for purposes of determining BSIA, unlike assessments for domestically-managed stocks. A June 2017 SSC Report to the Council (June 2017 Agenda Item C.6.b Supplemental SSC Report) acknowledges possible departures in determination of BSIA for HMS from the framework process used for coastal pelagic species and groundfish. The HMSMT believes the proposed revisions would serve to clarify important differences between domestic management and the international management process which applies to HMS stocks, and would make HMS FMP Section 4 consistent with other sections of the HMS FMP that were adopted for public review under Amendment 4 during the June 2017 Council meeting.

HMSMT RECOMMENDATION:
Adopt the proposed additional changes in the appendix.

PFMC
08/17/17

APPENDIX: Proposed Additional Changes under HMS FMP Amendment 4

4.0 Preventing Overfishing and Achieving Optimum Yield

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4.2 Maximum Sustainable Yield

Because MSY is a long-term average, it need not be estimated annually, but it must be based on the best scientific information available, and should be re-estimated as required by changes in long-term environmental or ecological conditions, fishery technological characteristics, or new scientific information.

As part of the biennial process (see Chapter 5) the HMSMT will review recent stock assessments or other information as described below and submit a draft SAFE document for review at the ~~June~~September Council meeting containing MSY estimates, noting if they are a change from the current value. The SSC ~~will~~may review these estimates and make ~~a recommendation~~recommendations to the Council on their ~~suitability for~~ application in management decisions. Based on this advice, the Council may recommend ~~a revision~~revisions to ~~a current~~ MSY ~~estimate~~estimates to NMFS.

MSY is estimated based on the amount of information available about the stock. MSY is specified as an absolute quantity, either in weight or number of fish. For management purposes the estimate of MSY by itself is less relevant than the reference points, F_{MSY} and B_{MSY}, that may be derived from it. However, for many HMS, a deterministic estimate of MSY may not be possible. In these cases proxy values for MSY-based reference points may be used. These MSY related reference points may be specified in various ways, for example relative to a stock depletion level (biomass relative to unfished biomass) or spawning potential ratio (the spawning potential per recruit referenced to the unfished level).

The following ~~categories show~~describes the relationship between available information and the estimation of MSY:

~~Category 1,~~For regularly assessed stocks: A plausible estimate of MSY (and other MSY-based reference points~~)~~ or their proxies may be determined from the assessment. ~~In the event that the Council determines,~~Because HMS assessments are generally conducted by working groups outside of the Council process, selections for status determinations may be based on what the science providers (e.g. ISC working groups, IATTC staff, SPC staff) provide in their reports. Based on advice from the SSC, ~~that MSY estimates derived from an assessment are not suitable for management,~~ the Council may recommend changes in the way that MSY is estimated in the assessment~~. Because HMS assessments are generally conducted by working groups outside of the Council process,~~ and such recommendations would be forwarded to the RFMO conducting or sponsoring the stock assessment through the U.S. delegation for consideration when conducting future assessments. In that event the Council could recommend to retain any current MSY estimate in the FMP or regulations, or propose an alternate estimate.

~~Category 2,~~For unassessed stocks with catch history and additional information on relative abundance or stock productivity: The HMSMT ~~compiles~~may compile the best available

stockwide catch data, or if not available, regional catch data and all additional information on a stock's productivity including relative abundance or catch~~/~~ and effort data if available. When a status determination is deemed necessary, the Council may recommend MSY or proxy estimates ~~will be developed~~for NMFS to use in making those determinations, based on the catch time series and additional information. ~~The relative impact of U.S. west coast fisheries may help to inform decisions on selecting appropriate reference points.~~

~~Category 3,~~For unassessed stocks with catch history but lacking further information on relative stock abundance or productivity: The HMSMT ~~compiles~~may compile the best available stockwide catch data, or if not available, regional catch data. ~~A~~When a status determination is deemed necessary, the Council may recommend MSY or proxy estimates based on a catch-based method such as the Depletion Corrected Average Catch (DCAC), Depletion Based Stock Reduction Analysis (DB-SRA), or in the case of a relatively stable catch history without indications of stock depletion, an average of selected catch levels ~~may be chosen to represent a proxy MSY~~.

No matter the method used to estimate MSY or select a proxy, the relative impact of U.S. west coast fisheries may help to inform NMFS's decision to make a status determination.

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4.4 Assessment of Stock Status

National Standard 2 requires using the best scientific information available in ~~managing MUS.~~ management. This requires periodic updating of stock status for comparing against status determination criteria. Stock status will be reported in Stock Assessment and Fishery Evaluation (SAFE) reports (Section 4.6). In the case of species under international management, the Council should recommend adopted SDCs as limit reference points to be considered by the appropriate RFMO (see also Section 2.1).

The methods for determining SDCs (described below) imply an ability to determine the level of biomass relative to its unfished level (B_0) and (at least conceptually) relative to B_{MSY}, and to determine the level of mortality (F) relative to some target level like F_{MSY}. ~~This may be possible only for Category I stocks. For Category II stocks~~This may be possible only for certain assessed stocks, depending on the amount of information available for stock assessments (see Section 4.2 regarding information available for assessments and determining MSY). When a stock assessment has not been completed, the relative biomass level could be estimated by the decline in catch rate (CPUE) or, with sufficient information on stock and recruitment, by percent spawning potential ratio (SPR), or proxies based on SPR, e.g., $B_{50\%}$ or $F_{50\%}$. ~~For Category III stocks~~In these cases, it may be necessary to use proxy values to compute SDCs. For data-poor stocks, MSY or OY estimates based on catch history alone may be the only information available for management, and the F/F_{MSY} and B/B_{MSY} ratios must be derived from those estimates. In these cases, ~~it may be necessary to use~~ proxy values could be based on average stock-wide catch over an appropriate time period. F_{MSY} and B_{MSY} proxies can be scaled as fractions of B_0 or multiples of M, respectively, e.g., $B_{MSY}=0.5B_0$ or $F_{MSY}=1.0M$.

Both MSY and OY refer to a species' sustainable catch, stock-wide. For some species there is no

stock-wide catch information, and some (e.g., mako shark, dorado) occur within the management area as the edges of wider distributions, so even their maximum, regional catch levels are unlikely to reflect stock production. While stock-wide MSY is unknown for those species, the local catches can be used to estimate a local or regional MSY.

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