

COASTAL PELAGIC SPECIES MANAGEMENT TEAM REPORT ON STOCK ASSESSMENT PRIORITIZATION PROCESS

At the November 2018 meeting, the Pacific Fishery Management Council (Council) directed the Coastal Pelagic Species Management Team (CPSMT) to develop a stock assessment prioritization (SAP) procedure for CPS finfish stocks which could be used by the Council and Advisory Bodies on a regular basis to provide opportunities for data review and research planning. At that meeting, the Council also directed the immediate interim use of the SAP procedure as described in the CPSMT report (November Agenda Item E.6.a, CPSMT Report 1).

Based on the biology, dynamic nature, workload considerations, and management priorities of CPS stocks, the Council has been using the CPS Fishery Management Plan (FMP) management categories as the primary vehicle for prioritizing stock assessments. The Active management category specifies regular assessments that directly inform harvest control rules and annual adjustments to management. A multi-year harvest control rule policy with no requirement for regular assessments is used for species in the Monitored management category. However, being categorized as a Monitored management stock does not preclude a stock from being assessed. The CPS FMP anticipated that Monitored management stocks would be assessed when there is a management need, and envisioned the potential movement of stocks between management categories. The FMP specifies that stocks be reviewed annually and that the CPSMT make recommendations on their appropriate management category which could change their assessment frequency. Although this has been done through the SAFE document in the past, the creation of a regular agenda item for SAP could be another avenue to accomplish this within the current management framework of the FMP.

The history of recent stock assessments for CPS stocks is described in Table 1 below. As mentioned above, CPS stock assessments have historically been driven by the management category in which the stocks have been placed based on the frequency described for the two CPS management unit stock categories. However, there could be other reasons to conduct a stock assessment outside of the frequency structure described for management purposes in the CPS FMP and this is primarily where the CPSMT sees value in a potential SAP process.

Table 1. Recent stock assessments.

Stock	Recent benchmark assessment	Last update	Management category
Pacific sardine	2017	2019	Active
Pacific mackerel	2019	2017	Active
Jack mackerel	n/a	n/a	Monitored
Central stock northern anchovy	n/a	n/a	Monitored
Northern stock northern anchovy	n/a	n/a	Monitored

Stock Assessment Prioritization Process

The methodology described in November 2018 (Agenda Item E.6.a CPSMT Report 1) and proposed for interim implementation has been simplified by the CPSMT and included at the end of this report as Table 2. The CPSMT believes that tools other than the included matrix (Table 2)

could potentially be used as guides to decide which stocks to prioritize for assessment.

Regardless of what criteria and mechanisms for making the decisions on which stocks to prioritize are ultimately instituted, the CPSMT sees value in the potential addition of a CPS agenda item on a regular basis to consider the general topics involved in a SAP process. Adding SAP as a regular Council agenda item would address the Council directive to include opportunity for Council, SSC, CPSMT, CPSAS, and public input in a more direct way. Additionally, an evaluation of the quantity and quality of data available to conduct a stock assessment on CPS stocks could also be undertaken during a regularly scheduled Council agenda item, possibly scheduled based on an adopted SAP process. This would likely require SSC involvement in concert with the National Marine Fisheries Service (NMFS) Southwest Fisheries Science Center (SWFSC). The CPSMT previously presented a draft list of questions ([Agenda Item E.5.b, November 2018](#)) for stocks in the Monitored management category to facilitate review of stock status and data availability.

After discussions with SWFSC stock assessment staff, the CPSMT recommends that any SAP type agenda item occur on no less than a biennial timeframe. November meetings would be an appropriate time, as they typically have CPS items while not being consumed by stock assessment approvals and management measures. A biennial approach would provide more lead time for the SWFSC, compared to an annual agenda item, as there are major planning and logistical considerations, such as those described below that would need to go into the development of a new stock assessment to ensure minimal disruption to existing data collection and assessment processes. To illustrate, decisions made at the November 2019 meeting may not be able to affect the SWFSC's assessment schedule until 2021 or 2022. The Council could also choose to set priorities for more than just two years ahead, therefore providing as much advance notice as possible, but retaining the opportunity to re-evaluate and adjust them as necessary when SAP comes before the Council again.

Stock assessment prioritization considerations

The SWFSC may have the capability to perform a full assessment on one stock and an update assessment on another stock during the same year. This does, however, require the SWFSC having previously completed a full assessment of the individual stock before an update assessment is possible. Currently there are no integrated stock assessment models accepted for the central stock of Northern anchovy (CSNA), northern stock of Northern anchovy (NSNA), or jack mackerel stocks that could be updated.

The SWFSC has restrictions on flexibility due to extensive planning requirements. Currently, ship time is planned and booked five years in advance and optimized survey timing and design will vary among CPS stocks. Ageing protocols are necessary to produce age compositions for integrated stock assessments and require staff time to perform; this also needs to be planned well in advance, particularly in the near-term, as aging expertise and capacity for some CPS stocks is currently limited. This would make it difficult to move away from the current structure where assessment capacity and planning is built around the need to annually conduct assessments for a set number of stocks, with the expectation that this will not be changing annually or even biennially. However this does not preclude prioritizing and conducting one-off assessments outside this framework.

As an alternative to the SAP process outlined above, the CPSMT notes that it has been proffered that the availability of estimates of biomass could move away from traditional integrated stock

assessments; instead, information on stock status could be informed directly by biomass estimates from the SWFSC acoustic trawl (AT) survey, which could potentially yield results for all stocks on a yearly basis. It should be emphasized, however, that this alternative to the SAP would be dependent upon sustained support for the AT survey and vulnerable to funding or priority changes for the AT survey and/or survey vessel. For example, the survey vessel time and range may not be sufficient to meet coverage needs for all five stocks or may need to accommodate other needs than CPS, e.g., marine mammals. Finally, transitioning to survey-based assessments would require a management strategy evaluation (MSE) of this approach, as stipulated by the February 2018 AT methodology review (PFMC 2018).

Table 2. Simplified DRAFT version of the ranking matrix.

	Factor	Scoring Based On	Scoring Range	PSDN	PMCK	JMCK	CSNA	NSNA	Factor Wtg
Fishery Importance	Commercial Fishery Revenues	PacFIN Ex-Vessel Revenues (e.g. 2012-2017)	0 to 5						
	Recreational Fishery	Regional fisheries expert opinion	0 to 5						
	Constituent Demand	Regional fisheries expert opinion	0 to 5						
	Rebuilding Status	National stock status database	0 or 1						
Stock Status	Relative Stock Abundance	Most recent SSB and target/threshold levels, or proxy	1 to 5						
	Relative Fishing Mortality	Most recent SSB and target/threshold levels, or proxy	1 to 5						
Ecosystem Importance	Role in Ecosystem	Maximum of bottom-up and top-down components; assigned by regional fisheries expert opinion	1 to 5						
Assessment Information	Unexpected Changes in Stock Indicators	Regional fisheries expert opinion, where indicators are available	0 to 5						
	Years Since Last Assessment	5 = never assessed, 0 = assessed annually	0 to 5						