

COASTAL PELAGIC SPECIES MANAGEMENT TEAM REPORT ON THE FISHERY ECOSYSTEM PLAN INITIATIVE WORKPLAN

The Coastal Pelagic Species Management Team (CPSMT) reviewed the March 2023 report of the Ecosystem Working Group (EWG) on the Fishery Ecosystem and Climate Information Initiative Workplan ([Agenda Item H.2.a, EWG Report 1, March 2023](#)), and several members also attended the EWG webinar and [presentation by Ms. Yvonne deReynier](#) on March 1, 2023. The CPSMT met remotely and discussed the Fishery Ecosystem Plan (FEP) Initiative and Workplan on March 2. The CPSMT thanks the EWG for their work on this initiative, supports moving forward with this EWG workplan, and offers the following comments for consideration.

The EWG requested advice from Council advisory bodies and the public on:

- *Preferred methods or priorities for grouping Council-managed species together when choosing new species groups for future ecosystem and climate information reports; and*
- *Preferred times in FMP-specific management processes when it would be most useful to receive ecosystem and climate information to support harvest-setting, or pre-season or in-season management processes (see Appendix A).*

Choosing Species Groups - The CPSMT thought about priority CPS to consider for this work. Three species warrant priority consideration: Pacific sardine; Pacific mackerel; and both stocks of northern anchovy. In terms of methods for grouping species, the CPSMT recommends conducting a literature review and examining trends in biomass and distribution from acoustic-trawl (AT) surveys conducted by the Southwest Fisheries Science Center to determine if or how these stocks can be grouped.

Preferred times - The CPSMT examined the schedule for CPS assessments in the EWG report Appendix A and found that it matches Council Operating Procedure 9 Schedule 3. In terms of timing for providing climate and ecosystem information for consideration in setting harvest specifications, the CPSMT should be able to incorporate information provided by the EWG and/or in the ecosystem status report (ESR) at the March meeting each year, and any additional information provided in advance briefing books for April, and June meetings when CPS harvest specifications are considered.

The EWG also sought input on a number of other items, some of which the CPSMT addresses below:

Section 1 of the Report:

The CPSMT considers the proposed risk classification table used by the North Pacific Fishery Management Council (provided as Table 1 in the EWG report) to be an effective tool when evaluating ecosystem and other information with advisory bodies and the Council, but notes that this format does not currently include a good way to account for positive ecosystem signs. For example, as noted in Ms. DeReynier's presentation, the CPSMT utilized ecosystem information from the 2022 ESR about the positive ecosystem indicators when making recommendations regarding setting harvest specifications for the central subpopulation of northern anchovy (see [Agenda Item D.1.a, Supplemental CPSMT Report 1, June 2022](#)). The CPSMT recommends that

the EWG examine methods on how best to incorporate both positive and negative climate and ecosystem information for Council decisions regarding scientific uncertainty when setting acceptable biological catch.

The EWG report also mentions utilizing ecosystem and climate information in the design and implementation of harvest control rules (HCRs), citing the use of sea surface temperature (SST) for Pacific sardine. As noted in their report, there was confidence in the use of SST information for setting harvest levels for sardine when this was first implemented, but the SST index utilized was later changed based on new science. Since that time both the CPSMT and the Scientific and Statistical Committee have called for the use of SST index currently used to determine E_{msy} in the HCRs be re-evaluated as a predictor of stock productivity (see April 2021 [Agenda Item E.4.a, Supplemental CPSMT Report 1](#) and [Supplemental SSC Report 1](#)). The CPSMT sees the value in utilizing ecosystem indicators in HCRs but notes they present challenges, as the EWG noted about its use for sardine. There is new ecosystem and climate information recently published that may potentially be utilized to help gain a more mechanistic understanding of the drivers of sardine stock productivity (e.g., Checkley et al. 2017, Koenigstein et al. 2022) that may be helpful for future work on the sardine HCRs. Note that the Checkley et al. 2017 paper included in the references below was not included in the references section of the EWG report.

Section 2 of the Report:

The CPSMT agrees with the EWG that criteria and process for prioritizing species or species groups should be developed and thinks the example criteria provided are a good starting place. But the CPSMT thinks that an additional criterion should be considered under the Ecological bullets. While most CPS did not rank as highly vulnerable in the McClure et al. 2023 paper (now published with citation below), they have long been noted to experience boom and bust cycles thought to be climate and environmentally driven. Adding that consideration for selection along with the data richness criteria listed under the Management-related bullet would add priority for some CPS like sardine. As for groupings of CPS and the Checkley et al. 2017 reference, the CPSMT notes ongoing scientific debate regarding specific responses of CPS finfish species and stocks to climate and environmental variables and urges a broader look at the literature as well as examination of the AT survey work as suggested above.

Petrale sole seems an appropriate pilot species to work with, but the CPSMT wonders if including others that play important parts in the forage base for the ecosystem might also be considered at this time. Doing so would bring a more diverse perspective to the work. The CPSMT recognizes however that starting with one species may provide an easier, more straightforward way to begin this new initiative given the ambitious timeline provided in the report.

Section 4 of Report:

The CPSMT acknowledges The Nature Conservancy (TNC) for proposing workshops related to this initiative. Ms. Gway Rogers-Kirchner of TNC and the Ecosystem Advisory Subpanel informed the CPSMT on March 2 that they have secured some funding dedicated to these proposed workshops. The CPSMT recommends the Council consider if such workshops should be scheduled and particular elements they should focus on to help move this initiative forward.

References:

- Checkley Jr., D. M., R. G. Asch, and R. R. Rykaczewski. 2017. Climate, anchovy, and sardine. *Annual Review of Marine Science* 9:469-493.
- Koenigstein, S., M. G. Jacox, M. P. Buil, J. Fletcher, B. A. Muhling, S. Brodie, P. T. Kuriyama, T. D. Auth, E. L. Hazen, S. J. Bograd, and D. Tommasi. 2022. Population projections of Pacific sardine driven by ocean warming and changing food availability in the California Current. *ICES Journal of Marine Science* 0:1-14.
- McClure, M. M., M. A. Haltuch, E. Willis-Norton, D. D. Huff, E. L. Hazen, L. G. Crozier, M. G. Jacox, M. W. Berger, S. Beyer, J. Bizzaro, D. Bougton, J. M. Cope, M. Carr, H. Dewar, E. Dick, E. Dorval, J. Dunham, V. Gertseva, D. M. Green, R. G. Gustafson, O. S. Hamel, C. J. Harvey, M. HJ. Henderson, C. E. Jordan, I. C. Kaplan, S. T. Lindley, N. J. Mantua, S. E. Matson, M. H. Monk, P. Moyle, C. Nicol, J. Pohl, R. R. Rykaczewski, J. F. Samhuri, S. Sogard, N. Tolimieri, J. Wallace, C. Wetzel, and S. J. Bograd. Vulnerability to climate change of managed stocks in the California Current large marine ecosystem. *Frontiers in Marine Science* 10:1103767. doi: 10.3389/fmars.2023.1103767