ECOSYSTEM ADVISORY SUBPANEL REPORT ON THE ANNUAL CALIFORNIA
CURRENT ECOSYSTEM STATUS REPORT

The Ecosystem Advisory Subpanel (EAS) commends the California Current Integrated Ecosystem Assessment (CCIEA) Team for their continued work to inform stakeholders and fishery managers about the state of the California Current Large Marine Ecosystem (CCLME). We thank the interdisciplinary team that works together to produce the annual Ecosystem Status Report (ESR or Report). Their work enables us to better conserve and manage our fishery resources. It facilitates the Council's work to better understand the effects of inter-annual and long-term ocean changes on our fish, fisheries, and fishing communities and to identify ways in which the Council could incorporate such understanding into its decision making. We are concerned that any reductions to CCIEA Team staffing may affect their ability to produce this high-quality data product that is the foundation of ecosystem-based management.

We appreciated a presentation of the ESR at the February 25 Ecosystem Workgroup (EWG) online meeting as well as the opportunity to discuss the ESR with members of the CCIEA Team in a joint session with the EWG. We offer the following highlights to draw the Council's attention to notable findings and provide recommendations to further refine future iterations of this impactful document.

Highlights and Recommendations

➢ This year's Report clearly identifies that marine heatwaves are now common within the CCLME and have direct ramifications on fisheries. Figure F.8 in Appendix F (Climate and Ocean Indicators) shows a near-perpetual marine heatwave presence since 2019, with the 2024 heatwave being one of the 10 largest on record.

➢ This year's Report made significant advances in forecasting future climate effects on our fisheries. In particular, Appendix D and E provide valuable insight into the mechanisms by which climate change may impact the distribution of fish stocks and conflicts among ocean uses (Figure E.2). This was a lofty goal requested by the EAS in previous years, and we appreciate its inclusion.

➢ The salmon stoplight tables continue to evolve into a powerful tool to communicate the effect of ecosystem indicators on various stocks. We support increased application to management and/or a role in complementing risk tables. The EAS preferred a stock specific salmon forecast (as is currently included as Figure 3.9) as it presented insight

into the dynamics of particular stocks.

➢ We noted strong connections between this year's ESR and the Council's work related to Inflation Reduction Act (IRA)-funded projects and FEP Initiative 4. In particular, the social and economic information characterized links to the proposed dashboard development under IRA project 2.

➢ We are interested in additional analyses on sea turtles, particularly loggerhead and leatherback, including likelihood of presence, diet, and availability of forage, as data allows. This could also assist with IRA project 3.

➢ We reiterate that including observations from the fishing fleet, where appropriate, could provide powerful insight into the state of the ocean and can help explain episodic and difficult to predict/model events. We highlight the work by ODFW/Oregon Sea Grant/Oregon State University in creating an application for this purpose as an important step and hope it can be widely adopted coastwide to provide the opportunity for increased inclusion of at-sea skipper observations. The reporting app's utility would be further enhanced by the ability to receive notifications that can be confirmed and verified by fishermen. However, we also note that voluntarily reporting information relies on trust and transparency relative to how the data will be used. We highlight that the inclusion of fishermen 'on the water' observation has been discussed for future ESRs and support this.

➢ One new ESR-related activity under development is information on species distribution and abundance derived from environmental DNA (eDNA). eDNA represents an emerging, cost-effective opportunity to construct annual and long-term insights into fish community dynamics. We are especially interested in the ability to use eDNA to detail regional forage availability and to understand food habits of dependent predators.

➢ We support the effort to link different data streams, including regional surveys and seabird diet, to better understand forage community composition.

➢ The EAS suggests that whale entanglements could be better contextualized to allow clearer interpretation of entanglement data for management and to more accurately inform public opinion. In particular, we are sensitive to presenting information on the number of entanglements absent the full picture of how whale abundance and accessibility/likelihood of reporting has changed over time. We also note that entanglements can be from multiple sources and communicating which gear types resulted in entanglement facilitates informed management and strengthens the need for sector-specific gear marking.

➤ We appreciate the expanded characterization of fishing communities' social vulnerability, as has been requested by this advisory body in previous years. We encourage continued efforts to aggregate these data by ports identified by fishing communities.

➤ Appendix E (Developing Indicators of Climate Variability and Change) states, "North Pacific Ocean has warmed to the point that long-term warming trends are overshadowing natural variability and confounding past relationships between the CCE and basin-scale Pacific variability," which impacts current and future interpretation of the PDO. Given the connections to the PDO made in other sections of the ESR, it would be helpful to provide this important context in the main body of the ESR for interpreting how changes in the PDO affect Council-managed fisheries.

This year's ESR represents a comprehensive summary of the state of the CCLME and, increasingly, provides insights into the resilience and future of our fisheries and communities.

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