

ECOSYSTEM WORKGROUP REPORT ON CLIMATE AND COMMUNITIES INITIATIVE REVIEW AND PRIORITIZE TASKS

To make better use of ideas generated under the Climate and Communities Initiative (CCI), **the Ecosystem Workgroup (EWG) recommends that the Pacific Fishery Management Council (Council):**

- Review the list of CCI ideas for Council Processes and Communication in Appendix A to this report and decide whether any of the ideas herein could support future Council action. If so, assign Council staff to, at a minimum, address those ideas in future situation summaries and other analyses of Council actions.
- Review the Council's Inflation Reduction Act (IRA) proposals and CCI Follow-Up Tasks in order to consider ways to integrate these efforts.
- Review the list of CCI ideas for data and research needs in Appendix A and provide comments on needed scientific work in support of Council decision-making.

Climate and Communities Initiative

The Council worked on its third ecosystem initiative, the CCI, from 2017-2021. The purpose of the CCI was to help the Council, its advisory bodies, and the public to better understand the effects of near-term climate shifts and long-term climate change on our fish, fisheries, and fishing communities and to identify ways in which the Council could incorporate such understanding into its decision making.

Council action on the CCI concluded in September 2021, with a Council review of the CCI follow-up tasks in a summary report from its [Climate and Communities Core Team](#) (CCCT). Since then, the Council has worked through several of those tasks and the EWG has regularly reported on the Council's progress on these tasks. We last did so in a [September 2023 report](#) to the Council on its potential application for Inflation Reduction Act (IRA) funds. We provide an updated list of those tasks in Appendix B to this report.

Beyond the tasks the CCCT identified in 2021, the initiative's scenario planning process generated much more extensive lists of ideas for developing management actions in support of climate-ready fisheries (available on the Council's [website for the CCI](#) at the links to regional climate implications workshops). The EWG returned to and reviewed those worksheets, summarized ideas from the workshops, and organized them by topic (Appendix A). These ideas originated from the diverse array of geographic workshop participants, *not* from the EWG.

IRA Funding Opportunity

NMFS has identified two purposes for IRA funding, both aligned with the purpose of this agenda item:

- Implementation of fishery management measures necessary to advance climate-ready fisheries by improving climate resiliency and responsiveness to climate impacts; and/or
- Development and advancement of climate-related fisheries management planning and implementation efforts in support of underserved communities.¹

The purposes for IRA funding to fishery management councils and the Council staff's IRA funding proposals² substantially overlap with the CCI Follow-Up Tasks and with potential ecosystem initiatives in the FEP Appendix:

- IRA proposal 1 *Innovating the Implementation of Council Actions to Respond to a Dynamic Ocean Environment* has connections to FEP Initiative 2.8: Assess Flexibility in Fisheries Management Process.
- IRA proposal 2 *Considering the effects of Council management actions on vulnerable fishing communities impacted by a changing marine ecosystem* has connections with FEP Initiative 2.6: Supporting Fishery and Fishing Community Resilience Initiative
- IRA proposal 3 *Developing climate-ready fishing methods that mitigate bycatch of non-target, associated species in a changing ecosystem* has connections to FEP initiative 2.3: Cross-FMP Dynamic Bycatch Monitoring and Minimization Policy Initiative.

As of late January 2024, Council staff have submitted their IRA proposals; however, many of the project management and execution details are left to be worked out. The Council should work closely with state and federal agencies, advisory bodies, and the public to develop the project management and execution details for any IRA-funded Council projects. The EWG can support this effort in part by clearly articulating and improving the connections between the IRA proposals and the foundational thinking that led to the development of FEP Initiatives 2.3, 2.6, and 2.8. This will ensure that all priorities and constraints are considered that the Council takes into account public investment in the CCI, and that the overall goal of climate ready fisheries and resilient fishing communities will be achieved in a collaborative, transparent way.

¹ Agenda Item C.4 Supplemental Attachment 1 November 2023. <https://www.pcouncil.org/documents/2023/10/c-4-supplemental-attachment-1-staff-report-on-inflation-reduction-act-funding-proposals.pdf/>

² <https://www.pcouncil.org/documents/2024/01/agenda-item-c-2-overview-of-inflation-reduction-act-proposals.pdf>

Appendix A: Consolidated suggestions for Council and agency action from the CCI on: Council Process, Communication, and Science

Council Processes:

1. During potential Council actions to select preliminary preferred or final preferred Council alternatives, staff analyses of alternatives presented to the Council should evaluate and discuss whether alternatives would create more or less flexibility for fishery participants.
2. Evaluate whether Council allocation actions should build in more flexibility over the long-term. Spatial and sectoral allocations should be periodically reviewed for whether those allocations:
 - a. are still relevant to the current geographic distribution of the allocated stocks,
 - b. affect the diversity of fishing portfolios,
 - c. affect the recruitment of newer fishermen into the fleet, and
 - d. affect the costs of permits and boats such that those costs exceed fishing income over time.
3. Conduct an EEZ-wide review of potentially underexploited stocks that can be sustainably fished, including fisheries which target marketable species that may become more available in the future due to shifts in distribution, and identify opportunities for market localization (e.g., shift product forms for domestic markets) and development of associated infrastructure.
4. Identify potential climate induced allocation issues between existing defined groups (sectors, states, management bodies, etc.) to proactively develop strategies to mitigate conflicts.
5. Periodically assess whether boundaries and timing of Council closed areas and other area-based management measures still accomplish the original conservation goals under current and future climate and ocean conditions. Develop strategies for creating regulatory frameworks for species whose abundance fluctuates in order to allow fisheries to capitalize on the availability of climate shifting resources.
6. Develop mechanisms for incorporating purposefully built “if/then” statements into all fishery management frameworks to allow for timely management changes. Council should also consider the limits of flexibility and whether, if we had perfect advance information on a given stock, that would change how the Council is operating, or how the Council uses a precautionary harvest framework.
7. Explore the development of a permit system that will allow permits to be owned and leased by a communal group and/or to pool risk in other ways, including via insurance schemes. In other words, look for ways for permits to be shared across vessels without jeopardizing harvest levels.
8. Review history of fishery disaster declarations for West Coast fisheries to assess what proportion may have been related to climate variability and change. Assess what those disaster declarations tell us about the need for changes to fisheries management measures.
9. Re-evaluate the Council’s EFP process to simplify and clearly define the process requirements so that they do not exclude participation (especially for smaller vessels).
10. Identify mechanisms to align EFP review with funding sources (e.g., Saltonstall-Kennedy grant) and Council research and data needs. Encourage/support more EFPs that address shifting stocks – opportunities to sustainably target shifting (or rapidly growing) stocks,

identify management challenges where less desirable species may be out-competing a fishery's target stocks, and opportunities to minimize bycatch of choke species (e.g., shortbelly rockfish in the hake fishery).

11. Identify ways to expedite both the Council and NMFS implementation of EFPs for use under changing conditions, possibly supporting fishing portfolio diversification.
12. Evaluate whether the Council process itself is adequately flexible by reviewing the recommendations made under the Council Meeting Process and Efficiency agenda item from April 2023.
 - a. Shorten Council meetings by handling more issues, particularly administrative items, with advance webinar briefings.
 - b. Schedule the future workload planning agenda item remotely and after a few days break from Council meetings.
 - c. Hold CPS and HMS focused long-term planning meetings (as done for salmon and groundfish) to allow for in-depth consideration by Council members.
 - d. Identify Council actions that can be addressed during shorter online meetings in-between the five standard meetings in order to shorten the requirements for in-person time at the standard meetings.
 - e. Identify opportunities to implement automated decision rules (e.g., when ecosystem indicators suggest a change in state)

Communication:

1. Continue to promote diverse participation by supporting and expanding on opportunities (i.e. [Marine Resource Education Program](#)) for members of the public to learn about and participate in the Council process.
2. Identify ways in which Federal, state, and tribal agencies can improve communication with their constituents so that stakeholders and the public better understand their interests and the potential impacts and opportunities associated with climate change.
3. Explore the development of communication pathways to clarify the stock assessment review, approval, and implementation process to make it more clear for constituents so that they understand when the agencies and the Council are soliciting input.

Science in support of the Council process:

1. Shifting stock distribution:
 - a. Investigate mechanisms for stock assessments to account for changing ocean conditions, including exploring ways in which management decisions can buffer fish stocks against declining recruitment. (North Pacific and New England fishery management councils are struggling with the intersection of a changing climate and traditional stock assessments that often assume the ocean is the same as it was 20 years ago, and that modern recruitment will respond to ocean conditions that existed decades ago.)
 - b. Support the development of predictive modeling that informs the creation of management frameworks to address the anticipated implications of marine heatwaves and long-term climate change impacts. Review and evaluate how shifting stocks could affect the science that is conducted in support of Council actions.

- c. Review and identify opportunities for emerging West Coast fisheries which could be developed through EFPs as a response to changes in species' distributions while adapting the Council's fishery development process to maximize flexibility.
 - d. Improve and support diet and trophic interactions research to identify shifts in diet in response to ocean changes, and to improve understanding on higher trophic predator responses.
2. Effects of Fisheries Management
- a. Synthesize the current state of the knowledge on coastal infrastructure resilience, taking into account fishery dependent infrastructure that could affect geographically flexible fishing opportunities.
 - b. Assess the effects of past fisheries management decisions on small boat consolidation, and the follow-on effects (if any) on fishing communities.
 - c. Conduct an impacts assessment to better understand existing and future use of the ocean (i.e. fisheries, science, offshore wind, aquaculture, etc.) and address how altering survey methods may impact management decisions in the future.
 - d. Support efforts to improve the fishing distribution maps developed by the Integrated Ecosystem Assessment (IEA) team to spatially visualize and understand fishing community needs (including fishery diversification and dependency) relative to offshore wind installations and in support of marine mixed-use planning.
 - e. Support research to better understand how new marine uses may alter or displace fishing effort and whether that displaced effort increases potential interactions with protected species and/or interactions between commercial and recreational fisheries.
3. Data collection.
- a. Support engagement with industry through "Skipper science" to promote collaborative science and engagement with fishing communities within the Council process. State agency and/or local Sea Grant organized round tables could provide a venue for conversations and information exchange between industry and scientists.
 - b. Prioritize actions to address recreational and commercial spatial resolution data gaps, which impact predictions on how Council resources and fleets may change in response to changing ocean conditions.

Appendix B: Council progress on Climate & Communities Initiative follow-up tasks identified by the CCCT

1. CCI Tasks that the Council could add to a future agenda without additional background from the EWG:

- All FMP-specific advisory subpanels and management teams to report to the Council on barriers in the management of their fisheries to addressing the effects of ecological or management surprises and shifting stocks through in-season management actions, and on measures the Council could take to increase management nimbleness pre-season and in-season, while supporting long-term stock and ecosystem integrity.
- All FMP-specific advisory subpanels and management teams could report to the Council on priorities and processes for review of exempted fishing permit applications and recommendations about how such permits could be deployed to advance climate ready fisheries.
- Plan a future workshop, in coordination with NMFS' Secretariats to the U.S. Delegations to the RFMOs, involving Council, advisory body, and management team members who engage with regional fishery management organizations and other international forums that have management responsibility for West Coast fish stocks to:
 - Develop recommendations to address adapting to and mitigating for the effects of climate change on fish stocks and fisheries at the international level, and
 - Identify measures to improve current transboundary coordination to prepare for shifts in the distribution of managed fish stocks.
- Request that NMFS report to the Council on the West Coast fisheries' disaster determinations made in response to events that could be characterized as climate variability or change since 2010.
- Request that NMFS report to the Council on coordination among its hatchery, habitat, and hydropower policies to buffer Pacific salmon stocks against climate change effects.
- Task advisory bodies to explore the use of citizen science and Traditional Ecological Knowledge, through community-based, and collaborative efforts in data collection for tracking climate change.
- Annual updates on actions taken by other U.S. fishery management councils to better prepare fisheries for climate change – assigned to Council staff as part of PFMC's participation in the Council Coordination Committee.

2. CCI Tasks that require additional background work from the EWG and others

- Define flexibility and adaptability in the context of shifting West Coast stocks and identify appropriate considerations, based on scenario planning results and informed by the report 1 provided by TNC.

3. CCI Tasks already completed or assigned (completed items in bold)

- All FMP-specific advisory subpanels and management teams could report to the Council on opportunities for and challenges to embedding climate variability and change into our assessments, decision tables, and scientific advice for fishery management unit species,

with advice and input from the Scientific and Statistical Committee. **Part of Ecosystem and Climate Information Initiative.**

- Catalog potential processes to address incorporating climate variability and change data and information into our stock assessments, ecosystem assessments, scientific advice, and decision-making, including expected shifts in our stocks abundance and distribution, and ecosystem conditions, over the next 5-20 years. **Initial discussion provided in Chapter 5 of the updated FEP adopted in March 2022; also, part of Ecosystem and Climate Information Initiative.**
- Bring FMP-specific ecosystem reporting into the Council process at times when it is most needed and useful, supplementing the annual ecosystem status report and harvest decisions that are under development. **Part of Ecosystem and Climate Information Initiative.**
- Use NOAA’s climate vulnerability assessments to prioritize stocks for climate MSEs intended to develop climate-ready harvest control rules and other management measures. **Part of Ecosystem and Climate Information Initiative.**
- Ask the California Current Integrated Ecosystem Assessment (CCIEA) Team to provide an appendix in the annual ecosystem status report that provides information specific to climate change, takes into account the CCI scenarios, and develops climate early warning indicators – **done March 2022, updated March 2023. See Appendix E of Agenda Item H.2.a, [CCIEA Team Report 1](#), March 2022; Appendix E of Agenda Item H.1.a., [CCIEA Team Report 1](#), March 2023.**
- EWG asked to include statement in the Council’s Guidance Document on Offshore Non-Fishing Activities on the role of greenhouse gas emissions in climate change and related implications for West Coast fisheries – **done March 2022, see Agenda Item C.2.a, [EWG Report 1](#), March 2022.**
- EWG asked to reference the final Scenario Planning Report(s) in the FEP as an example of potential impacts of climate change – **done, see [FEP at Section 5.2](#).**
- Develop Council webpage for climate-related work and resources to assist in educating and engaging the public – **assigned to Council staff.**
- Develop summary report on the Council’s CCI scenario planning process – **done February 2023. See deReynier, Y., C. Dahl, C. Braby, G. Kirchner, R. Lincoln, T. Moore, C. Niles, C. Ridings, J. Samhour, J. Star, S. Stohs, and J. Ugoretz. 2023. U.S. Pacific Coast Federal Fisheries Scenario Planning Summary Report. NOAA Tech. Memo. NMFS-OSF-12, 157 p., [Supplemental Information Report 8](#), March 2023.**

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