

ECOSYSTEM WORKGROUP REPORT ON  
THE FISHERY ECOSYSTEM PLAN FIVE-YEAR REVIEW

For its advance briefing book report (Agenda Item F.2.a., EWG Report 1), the Ecosystem Workgroup (EWG) provided an updated draft of the Fishery Ecosystem Plan's (FEP's) Chapter 3, *California Current Ecosystem Overview*. During the EWG's September 8-10, 2020 meeting, we held a roundtable discussion with economists and other social scientists who regularly work to characterize and assess the fisheries and fishing communities that are part of the California Current Ecosystem (CCE). We are grateful for the willingness of participating scientists to help us think about future drafts of Chapter 3 and are looking forward to hearing further thoughts on Chapter 3 from the Pacific Fishery Management Council (Council), its advisory bodies, and the public.

During the EWG's September meeting, we also discussed needed revisions to the draft outlines for Chapters 4 and 5, to better take into account the FEP goals and objectives that the Council had adopted in March 2020. With this supplemental report, we are proposing draft revisions to the Chapter 4 outline, and are recommending pulling Chapter 5 out of the FEP to make it a stand-alone document for greater ease of use. Chapter 4 is intended to discuss environmental change, human activities, and social-ecological dynamics in the CCE, so that the larger Council family can understand interactions between different ecosystem components in order to better meet our FEP goals and objectives. A revised draft outline for Chapter 4 is provided in Appendix 1 to this report.

In the 2013 FEP, Chapter 5 was intended to serve as a stand-alone chapter that would provide "non-Council entities with information on some of the Council's highest priority concerns for non-fishing activities within the West Coast Exclusive Economic Zone (EEZ). . . discuss[ing] species, habitat types, fisheries, and ecological functions of particular concern to, or that may strongly drive, the Council's policies for CCE resources." During the EWG's September discussions, we realized that not only did this chapter have a different audience from the rest of the FEP, it would be easier to use as intended if non-Council entities operating in the EEZ could access it separately from the FEP. The existing outline of Chapter 5 of the FEP is provided on pages 2-4 of Agenda Item F.2., Attachment 1. The EWG would particularly appreciate a chance to collaborate with the Habitat Committee over this winter to refashion the Chapter 5 outline so that it can better stand separate from the FEP and serve its intended purpose. The bulk of the EWG's workload over the fall and winter will be dedicated to further revising Chapter 3 and to re-drafting Chapter 4, so we do not believe that pulling the existing Chapter 5 out of the FEP will affect the pace of the FEP's revision.

For this September 2020 meeting, the EWG recommends that the Council:

- Review and provide comments on the new Section 2.4 and revised draft Chapter 3 of the FEP provided in EWG Report 1 for this agenda item, forwarding comments from Council advisory bodies and the public as appropriate;
- Review and provide comments on the draft outline for Chapter 4 found in Appendix 1 to this supplemental report;
- Task the EWG with continued drafting of Chapters 3 and 4 for the March 2021 Council meeting;

- Task the EWG with working with the Habitat Committee and other advisory bodies, as appropriate, to outline what is now Chapter 5 as a stand-alone document for the March 2021 Council meeting.

Assuming those four tasks are assigned for the September 2020 through March 2021 period, the EWG believes that the Council and the public will have an opportunity to review a final draft FEP at the Council's September 2021 meeting.

**Chapter 4 Environmental change, human activities, and social-ecological dynamics in the California Current Ecosystem**

This chapter broadly examines how human and environmental forces interact to affect living marine resources and fisheries communities. For those effects that can be addressed by fishery management measures, the Council can consider, improve and integrate the information that supports decision-making across its fishery management plans (FMPs). Ultimately, the Council could use this FEP chapter to inform fishery management measures that help buffer against uncertainties resulting from those effects, and that support greater long-term stability within the California Current and for its fishing communities.

Chapter 4 builds on Chapter 3, considering the complex interactions within the CCE, including the physical environment, biological environment, and the social and economic environment. Chapter 4 examines the interacting effects of human and environmental forces through the lens of the FEP’s Goals and Objectives, provided in the table, below.

FEP Goals	Chapter 4 Section
Goal 1: Provide a framework and public forum to improve and integrate ecosystem information for use in Council decision-making	Section 4.6 (fisheries management process)
Goal 2: Conserve and manage species’ populations and the ecological relationships among them to realize long-term benefits from marine fisheries while avoiding irreversible or long-term adverse effects on fishery resources and the marine environment.	Section 4.3 (fish stocks, biological environment)
Goal 3: Implement fisheries management that ensures continued ecosystem services for the wellbeing of West Coast communities and the nation.	Section 4.5 (communities, social and economic environment)
Goal 4: Protect and restore marine habitat diversity and integrity to the extent practicable	Section 4.2 (physical environment and habitat)
Goal 5: Manage fisheries to support goals for protected species’ recovery	Section 4.4 (protected species, biological environment)
Goal 6: Promote fishery management that is sufficiently adaptive to account for the effects of climate variability and change, ocean acidification, marine heat waves, harmful algal blooms, and hypoxia.	Section 4.1 (physical ocean processes and environment)

#### *4.1 Effects of Climate Variability and Change on the California Current Ecosystem*

[Retain and update discussion in existing 4.5, Aspects of Climate Change Expected to Affect Living Marine Resources within the CCE, which is compatible with Goal 6: Promote fishery management that is sufficiently adaptive to account for the effects of climate variability and change, ocean acidification, marine heat waves, harmful algal blooms, and hypoxia.]

#### *4.2 Effects of Human Activities on Marine Habitats*

[Retain, update, and consolidate text from existing 3.3.4, Human Effects on Council-Managed Species' Habitat, and 4.3, Direct and Indirect Effects of Fishing on Biophysical Habitat, which are compatible with Goal 4: Protect and restore marine habitat diversity and integrity to the extent practicable.]

#### *4.3 Shifts in Species' Abundance and Distribution and their Ecological Relationships*

[Retain and update discussion in existing 4.1, Changes in Fish Abundance within the Ecosystem, which is compatible with Goal 2: Conserve and manage species' populations and the ecological relationships among them to realize long-term benefits from marine fisheries while avoiding irreversible or long-term adverse effects on fishery resources and the marine environment.]

#### *4.4 Effects of Fisheries on Protected Species Recovery*

[Retain, reframe and update discussion in existing 4.2, Change in the Abundance of NonFish Organisms within the Ecosystem. Existing 4.2 is intended to address nonfish species broadly, but focuses on nonfish protected species. The new Section 4.4 would follow Goal 5 by explicitly focusing on fish and nonfish protected species: Manage fisheries to support goals for protected species' recovery.]

#### *4.5 Effects of Fisheries Management on Ecosystem Services and the Well-being of West Coast Communities*

[Retain and update discussion in existing 4.4, Changes in Fishing Community Involvement in Fisheries and Dependence on Fisheries Resources, which is compatible with Goal 3: Implement fisheries management that ensures continued ecosystem services for the wellbeing of West Coast communities and the nation.]

#### *4.6 Framework and Public Forum for Ecosystem Information used in Council Decision-Making*

[Linked to the new 3.5, brief discussion of how the process that the Council uses to address Goal 1 improves awareness of the Council and public of ecosystem states per the Goal 1: The FEP should provide a framework and public forum to improve and integrate ecosystem information for use in decision-making.]

PFMC  
09/14/20