# Review Scope: Scientific and technical review of the reference point thresholds prescribed in the Fishery Management Plan for California spiny lobster (*Panulirus interruptus*)

California Ocean Science Trust scientific and technical review on behalf of the California Department of Fish and Wildlife

**Scope and Purpose**

The California Department of Fish and Wildlife (CDFW) is committed to incorporating the best scientific information into fisheries management. The Marine Life Management Act (MLMA) identifies external scientific review as a key tool to ensure management decisions are based on the best available scientific information. Additional guidelines for scientific review have been developed through the CDFW Science Institute, and will assist in framing this review.

CDFW has asked California Ocean Science Trust, an independent non-profit organization dedicated to advancing a constructive role for science in decision making, to coordinate an external scientific and technical review of the reference point thresholds prescribed in the California Department of Fish and Wildlife’s Spiny Lobster Fishery Management Plan and supporting materials.

**Management Context**

Spiny lobster populations support important commercial and recreational fisheries, and play a key role in the southern California kelp forest ecosystem. A primary goal of fishery management under the MLMA is to ensure that fishing levels are sustainable and do not result in an overfished stock. Over the last three years, CDFW has developed a draft fishery management plan (FMP) to guide commercial and recreational fisheries for California spiny lobster in accordance with the MLMA. FMPs assemble information, analyses, and management options that serve as the vehicle for CDFW to present a coherent package of information, and proposed regulatory and management measures to the Fish and Game Commission (the Commission). The FMP becomes effective upon adoption by the Commission, following their public process for review and revision. Thus, it is important for the scientific underpinnings of the draft FMP to have undergone independent review prior to submission to the Commission.

**Review Request and Charge to Reviewers**

CDFW’s purpose in asking for this review is to ensure the scientific and technical elements presented within the FMP provide a rigorous underpinning for management decisions and regulatory action. Ocean Science Trust, in consideration of this management request, worked with CDFW to develop a scope of review that focuses on key scientific and technical components of the FMP and its supporting materials where an independent scientific assessment would add value. Thus, this is not a comprehensive review of the FMP, or the proposed approach to management contained therein. Rather, the central question of this review is:

*Given CDFW’s available data streams and analysis techniques, are the technical components, models, and supporting documents that underpin the FMP scientifically sound and reasonable?*

Specifically, the review will focus on the following components of the draft FMP:

1. The three proposed reference point thresholds (i.e., catch, catch per unit effort (CPUE), and spawning potential ratio) that will serve as proxies for signaling when changes within the fishery may warrant management responses**;**
2. the underlying science that informed the decision to manage the fishery as a single stock;
3. the comprehensiveness of the data supporting the estimate of spiny lobster habitat contained within marine protected areas;
4. estimates of stock productivity and its ability to support fishing (i.e., calculations for the lobster growth curves adopted in the Parrish Model for setting the spawning potential ratio threshold); and
5. the spawning potential ratio (SPR) model as presented in the “Final Report on Lobster Modeling Project” document (Parrish Model), including model assumptions, calculations, interpretation, and application of the model results in setting the SPR reference point threshold.

In addition to these specific sections of the FMP, reviewers will be asked to identify priority research and monitoring gaps associated with the scientific and technical components of the FMP. Reviewers may also provide recommendations for ways to work more closely with the academic community to collect and maintain the most up-to-date essential fishery information (EFI).

**Review Outputs**

To conduct the review process, Ocean Science Trust will work with CDFW to develop a set of questions for reviewers to consider in evaluating the elements outlined above. Ocean Science Trust will then work with the reviewers to produce a written summary of reviewer input. We acknowledge that reviewers may provide recommendations beyond the given charge; such recommendations will be honored and represented in the final summary. This review summary will be made publicly available on the Ocean Science Trust [website](http://calost.org/science-advising/?page=spiny-lobster-review) upon completion of the review.

**Roles and Responsibilities**

***Ocean Science Trust***

CDFW has requested Ocean Science Trust to serve as the independent appointed entity to design and coordinate all aspects of this scientific and technical review. Ocean Science Trust will assemble a committee of expert reviewers, and design and implement a scientific review process that promotes objectivity, transparency, reviewer candor, efficiency, and scientific rigor.

1. *Design and implement a review process that addresses management needs.* Ocean Science Trust will work with CDFW to formalize a review process that meets our collective intention of promoting full candor among reviewers, scientific rigor, efficiency, and fulfills Ocean Science Trust’s and CDFW’s shared commitment to public accountability and transparency. The document describing the review process will be publicly available on Ocean Science Trust’s [website](http://calost.org/science-advising/?page=spiny-lobster-review).
2. *Solicit expert reviewers using a rigorous selection process.* Ocean Science Trust will implement a process to identify approximately four reviewers that are expert in relevant and diverse scientific fields as applicable to the scope of this review. Ocean Science Trust will solicit reviewer recommendations from Ocean Science Trust’s own professional network, starting with the [Ocean Protection Council Science Advisory Team](http://calost.org/science-advising/?page=ocean-protection-council-science-advisory-team) (OPC-SAT). Final selection of reviewers will be made by the Ocean Protection Council Science Advisor (Ocean Science Trust Executive Director).
3. *Conduct a review process that is on task and on time.* Ocean Science Trust will work with CDFW to inform the review committee of the scope and purpose of their task, including how the information they produce will be used. Ocean Science Trust will gather and compile background information relevant to the FMP, and provide administrative and staff support to build greater efficiency into the review process. Ocean Science Trust will propose a timeline that balances management deadlines for delivery of the final product and availability of appropriate experts.
4. *Produce and deliver a summary report.* Ocean Science Trust will work with reviewers to complete a summary of reviewer input that includes reviewer comments and provides recommendations that focus on improving scientific and technical elements of the FMP as deemed necessary. Ocean Science Trust will provide the summary to CDFW, as well as make it publically available on Ocean Science Trust’s website.
5. *Encourage candor among reviewers.* To encourage unbiased and candid input, the review process will be single blind until completion of the review (i.e., reviewers will be kept anonymous until the final summary report is delivered to, and accepted by, CDFW). Ocean Science Trust will strive to obtain a consensus view among reviewers, however if this is not possible, dissenting views will be honored and represented in the review summary report.
6. *Serve as honest broker.* Ocean Science Trust will act as an honest broker between participating managers and scientists to help strengthen collaboration and mutual understanding, and promote clear communication.

***California Department of Fish and Wildlife***

CDFW will participate in the review process as follows:

1. *Provide all relevant project documents, data, and supporting materials.* CDFW will identify and provide all project documents, data, and other information necessary for reviewers to conduct a constructive assessment. CDFW will work to ensure all related materials are clear and accessible to reviewers in a realistic timeframe.
2. *Constructively engage with reviewers and Ocean Science Trust staff.* CDFW staff most familiar with the draft FMP will engage in the process and be available to answer questions or present materials to the review committee as necessary. The CDFW Marine Region Program Manager, Tom Barnes, and CDFW Biologist, Kai Lampson, have agreed to serve as the primary contacts during the review process. In order to adhere to review timelines, CDFW will respond to and provide feedback on requested materials from Ocean Science Trust in a reasonable, mutually agreed-upon timeframe.
3. *Consider reviewer comments and recommendations.* CDFW intends to consider and incorporate reviewer feedback and recommendations into the FMP and supporting materials as appropriate.