

Recreational Red Abalone Fishery Management Plan (FMP) Project Team

Working Meeting #2: Update on Work Plan and Discussion of Data Streams and De Minimis Fishery Design Options

Thursday, July 18, 2019

Summary of Key Themes and Discussion Highlights

The California Department of Fish & Wildlife (CDFW) and The Nature Conservancy (TNC), in partnership with the Ocean Protection Council (OPC), California Fish and Game Commission (Commission), and representatives from the recreational red abalone fishing community, hosted the second Project Team meeting (via webinar) for the recreational red abalone fishery management plan (FMP) development process on July 18, 2019 (agenda [here](#)).

The goals of the meeting were to share updates on work completed since the first Project Team meeting (May 22, 2019; Key Themes Summary [here](#)), begin to evaluate the opportunities and challenges of available data streams, and continue to discuss design options for a *de minimis* fishery by reviewing strawman proposals that incorporated Project Team concepts and ideas. More than 40 participants joined the webinar.

This document is intended to provide an overview of the discussion topics, key questions, and identified next steps that emerged from the meeting discussion. The summary is intended to capture high-level details and key themes, rather than provide a transcript of the discussion. A recording of the webinar is available [here](#).

Key references and materials are available on page 5 of this document; additionally, an overview on the recreational red abalone FMP process for the North Coast is provided in the May 22, 2019 Project Team meeting Key Themes Summary ([here](#)) for additional reference.

Project Team, Agenda Highlights

Project Team Updates Since May 22

Following the Project Team's first meeting on May 22, the Administrative Team has updated the work plan ([here](#)) to identify dates for all future Project Team meetings; the next Project Team meeting will be held in-person and is scheduled for Tuesday, August 27. The Administrative Team also developed a glossary of key terms ([here](#)) to help ensure everyone is clear on the nomenclature during discussions and help support the Project Team's communications. Finally, the team developed a data stream comparison table ([here](#)) that outlines available sources of information to inform management of the North Coast recreational fishery, which will continue to be updated and serve as a reference to inform ongoing red abalone FMP Project Team discussions.

The Administrative Team has followed up on data requests from the May 22 meeting (e.g., accessing Reef Check California data) and investigating other available data sources to inform the July 18 webinar discussion. Proposals received from members of the Project Team (i.e., public) have been posted online ([here](#)) and have continued to inform the *de minimis* fishery conversation.

On July 11, the Fish and Game Commission's Marine Resources Committee held a meeting during which representatives from CDFW and TNC provided an update on the progress of the overall red abalone management strategies integration process. The [audio recording](#) and PowerPoint [slides](#) are now available on the Commission website.

Dr. William Harford (lead modeler) provided an update ([here](#)) on the work conducted by the modelers since the Project Team last convened and posed a number of questions for the Project Team's consideration. The presentation and associated questions provided the foundation for discussions held during the July 18 meeting, including informing and prioritizing data streams and indicators^[1] to include in management strategy evaluation (MSE), and framing Project Team proposed ideas and concepts to evaluate *de minimis* fishery design. Key areas that modelers will need Project Team feedback surround: 1) data streams and indicators to include in MSE, 2) how to design a harvest control rule (HCR)^[2] based on those indicators, 3) what a total allowable catch (TAC) and which spatial areas would be used in a *de minimis* fishery, 4) developing scenarios to analyze in the MSE, and 5) feasibility of designed management approach.

[1] The term 'metric' was used interchangeably with the term 'indicator.' The Administrative and Project Teams will strive to use 'indicator' moving forward in an effort to use consistent terminology. Please see the glossary of terms for the working definition of 'indicator.'

[2] The terms 'framework' and 'decision-making framework(s)' were used to discuss and describe 'harvest control rules' at a high-level. The Administrative and Project Teams will strive to use 'harvest control rules or HCRs' moving forward in an effort to use consistent terminology. Please see the glossary of terms for the working definition of 'harvest control rule.'

Review Data Streams for Future Prioritization

Dr. Alexis Jackson (TNC; Admin Team Chair) provided a presentation (presentation [here](#); data streams comparison table [here](#)) to initiate a discussion with the Project Team regarding trade-offs when considering data streams (i.e. sources of information) to use in managing the North Coast recreational fishery. The Project Team discussed the merits of the data streams and the characteristics of the data to help narrow down and/or identify priority indicators.

Continue Brainstorm on *De Minimis* Fishery Design Options

Mr. Ian Taniguchi (CDFW; Admin Team member) shared a presentation ([here](#)) and presented a series of strawman proposals that had been compiled by the Administrative Team ([here](#)). The strawman proposals aimed to integrate and build upon Project Team break-out group discussions during the May 22, 2019 meeting, as well as other ideas and concepts submitted by members of the Project Team to date. The Project Team discussed the strawman proposals and provided feedback.

Key Themes & Discussion Highlights

Indicators (and their associated data streams) should be prioritized that ensure precautionary management of the red abalone resource, and indicators included in the final management strategy should provide context on both current stock status and environmental conditions that may impact the stock. Indicators must be sensitive enough to detect changes in a short timeframe. Cost and sampling frequency and scale are important considerations for prioritizing data streams.

- Based on the initial review of the data streams comparison table, there were no data streams that the Project Team suggested excluding at this time. Additional data streams were highlighted (e.g. Marine Protected Area (MPA) monitoring data set) for consideration, as well as

a need to consider data streams that can inform indicators used during both a *de minimis* and *non-de minimis* phase of the fishery.

- The Project Team took steps to categorize available data streams as follows: 1) environment, 2) body condition, 3) population, and 4) fishery.
- While challenging to model the direct mechanistic link between current stock status and trends in the environmental data (e.g., remotely-sensed sea surface temperature, kelp coverage, urchin abundance), it is important to monitor environmental conditions as part of management as changes in the environment drive changes in red abalone populations.
 - More discussion is needed on the importance of incorporating data from one or more of the kelp abundance surveys (i.e., aerial, intertidal, subtidal), as well as how to consider urchin abundance.
 - Sea surface temperature measurements alone are not sufficient to reliably predict changes in red abalone populations; however, atmospheric-climatic events like Pacific Decadal Oscillation, El Niño, and warm water anomalies, could be incorporated into the model.
- Data streams that are fishery-dependent in nature (e.g., catch-per-unit-effort) must be interpreted with caution because in a *de minimis* fishery where catch is very limited, they cannot be reliably used to estimate changes or risk to the resource.
- Long-term datasets were also identified by the Project Team as valuable and should be prioritized.
- A decision-tree framework should include indicators that allow managers to track the biological impact of environmental changes to the red abalone resource.

Coordination and standardization of data collection efforts among all the different sampling entities is an important process that CDFW could lead that would result in a more cost effective, comprehensive, and robust understanding of environmental conditions and the health of the red abalone resource.

- Multiple data streams could be compiled to address limitations originating from any one source. For instance, if a *de minimis* fishery were only generating diver-collected length data from larger individuals (as a result of a potential size limit of 8" or 9"), size frequency data from smaller individuals could also be collected by subtidal surveys conducted by academic researchers and citizen scientists.
- Partnerships and projects underway can be leveraged to collect additional data, specifically related to kelp coverage (e.g., Noyo Center for MARINE Sciences, Kelp Ecosystem & Landscape Partnership for Research on Resilience (KELPRR), Greater Farallones Association, Reef Check California (RCCA)).
- Data that is used to inform management of the red abalone fishery should be made publicly available in a timely manner.

*There is a need to address and define 'recovery' of the recreational red abalone resource in the North Coast so that a *de minimis* fishery can be designed accordingly, and progress towards recovery can be monitored.*

- A recovered stock may or may not reflect historical population levels due to a number of environmental and biological factors.
- Socioeconomic impacts to local communities need to be considered when designing a *de minimis* fishery.
- The modelers encouraged the Project Team to consider management design options for an open access fishery (a possibility should the resourced recover or is considered to have been 'rebuilt'), in addition to a *de minimis* fishery.

It will be important to design a de minimis fishery that generates data that will inform long-term management of the recreational red abalone fishery, including fishery-dependent data (i.e., gonad index, body condition), as well as fishery-independent data (i.e., size, density, recruitment).

- In discussing the *de minimis* fishery design and available data streams, the Project Team considered the optimal spatial scale and resolution of data collection efforts, which sites could best accommodate fishing pressure, genetic variation and population connectivity, etc.
- If a “biological fishery” were implemented, the number of individuals harvested at each site should be based on the sample size needed to reliably detect statistically significant changes in the status of the stock in the area of the fishery.
- The Project Team discussed a number of considerations for which sites should be considered for inclusion in the *de minimis* fishery, including:
 - Sites which can accommodate the minimum level of required harvest;
 - Sites where data and information are lacking, in an effort to fill knowledge gaps;
 - Sites where the most data are available, in an effort to build upon historical data; and
 - Rotating between data-poor and data-rich sites, enabling a broader characterization of the resource.

Total Allowable Catch (TAC) should be informed by MSE, reflect data collection needs, and may vary by site and region.

- There was strong support for a *de minimis* fishery designed around data collection (i.e. bio-fishery), using data collected by harvesters to fill key data gaps and inform long-term fishery management.
 - A bio-fishery meets the definition of a *de minimis* fishery (i.e., does not compromise stock recovery) while also providing citizens with fishing opportunities.
 - CDFW should consider a bio-fishery at multiple sites along the coast (e.g., not solely Fort Ross).
 - CDFW’s ability to collect at multiple sites may be limited.
 - Data collection needs should determine where and how TACs are allocated across the landing sites.
 - Bio-fishery must be operationalized as a collaboration between CDFW and fishermen; a simple data collection protocol and procedure should be established for providing CDFW with necessary data.
- The Project Team discussed the importance of designing a *de minimis* fishery that distributes harvesting pressure across sites.
 - Suggestion to move away from the focus on state parks and work with private land owners to have limited access to currently inaccessible stretches of coastline to harvest abalone (as currently done in hunting).
- Several options for collecting data and distributing opportunities among harvesters were suggested:
 - Derby-style fishery (similar to hunting) where fishing in a specific area is allowed on a date and is closed when a TAC is reached.
 - For data-poor sites, fundraising opportunities could be provided to clubs and organizations (similar to speciality hunting opportunities).
 - For data-rich sites, use a lottery approach.
 - The possibility of sharing tags with dive partners was discussed and caution was raised when considering limiting the season length (i.e., divers taking risks in bad weather to catch their allotment).

- The viability of a larger scale re-entry and/or limited access fishery, as opposed to a smaller scale *de minimis* fishery (e.g. biofishery), requires further investigation.
- Fines for poaching should be increased to limit illegal activities which may limit the successful recovery of the fishery.

There are other aspects of the resource and fishery dynamics that are important to consider when determining TAC and the design of the de minimis fishery.

- Connectivity among red abalone sites is limited;
- Recent changes in the habitat and redistribution of red abalone from deep to shallow water;
- Recent high mortality and prevalence of starved red abalone with poor body condition;
- The role of rockpicking given limited connectivity and recent habitat changes; and
- Economic distress on communities for lost fishing opportunities.

Next Steps

- A document was developed by the Administrative Team following the meeting that summarizes the proposed next steps for modelers ([here](#)) following the modeling, data streams, and *de minimis* fishery discussions.
- The Administrative Team will reorganize the content of the data streams comparison table to fit these new categories and update with actual cost estimates associated with full time employees, which will be made available for Project Team review.
- The Project Team, Administrative Team, and modelers will continue to evaluate available data streams with the goal of discussing priority data streams, and associated indicators, at the August 27 Project Team meeting.
- Strategic Earth will draft a 'key themes' summary for core Project Team review that will be posted on the OPC's webpage ([here](#)). Strategic Earth will circulate meeting support materials, address Project Team requests, and support Project Team coordination between meetings. Strategic Earth will also work with the Administrative Team to keep the Project Team informed of project updates and upcoming meeting details.

Key References and Materials

Materials referenced during the meeting are available online at

<http://www.opc.ca.gov/2019/05/red-abalone-management-strategies-integration/> including:

- [July 18, 2019 Project Team Meeting Agenda \(webinar\)](#)
- [Draft de minimis fishery proposals](#)
- [Draft datastream comparison table](#)
- [Updated Project Team Work Plan](#)
- [Glossary of key terms](#)
- [Next steps for modelers from May 22, 2019 Project Team meeting](#)
- *De minimis* fishery ideas and concepts received from the public (please see below "Project Team Proposals" section on the OPC website)
- North Central Coast Baseline Surveys of Kelp Forest Ecosystems: A report prepared for Sea Grant. Mark Carr, Emily Saarman, Dan Malone: University of California Santa Cruz. November 1, 2013 ([here](#))
- Project Team Updates since May 22 from the Modelers ([PowerPoint Presentation](#))
- Potential Data Streams for red abalone Fishery Management ([PowerPoint Presentation](#))
- De Minimis Fishery Concept ([PowerPoint Presentation](#))

Additional reference materials that provide background information on the management strategy integration process and foundational information are also available at

<http://www.opc.ca.gov/2019/05/red-abalone-management-strategies-integration/> including:

- [Project Team charter](#)
- [Administrative Team charter](#)
- [Abalone Recovery and Management Plan](#)
- [California Ocean Science Trust Recreational Red Abalone Fishery Peer Review webpage](#)
- [Final Report of the Scientific and Technical Review Panel Scientific Peer Review of Proposed Recreational Red Abalone Management Strategies](#)
- [Recommendations from December 2018 Fish and Game Commission meeting](#)
- [May 22, 2019 Project Team Meeting Key Themes Summary](#)

For more information about the recreational red abalone Project Team, please visit <http://www.opc.ca.gov/2019/05/red-abalone-management-strategies-integration> or contact hello@strategicearth.com. For more information on the red abalone FMP, please visit <https://www.wildlife.ca.gov/Conservation/Marine/Red-Abalone-FMP>.