Recreational Red Abalone Fishery Management Plan (FMP)

Working Meeting of the Project Team to Review and Discuss Management Strategies and Brainstorm on Managed/Restricted Access Fishery Options

Wednesday, May 22, 2019 | Santa Rosa, CA

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 a Project Team meeting for the Recreational Red Abalone Fishery Management Plan (FMP) development process on May 22, 2019 in Santa Rosa (agenda here). The goal of the meeting was to establish the Project Team, initiate its charge, and begin to integrate draft management strategies and develop options for a *de minimis* access fishery, as directed by the Marine Life Management Act (MLMA), the recommendations outlined by the OST-facilitated peer review, and the Commission. More than 40 meeting participants attended the meeting in Santa Rosa, California, and stakeholders and interested members of the public also listened in remotely.

This document is intended to provide an overview of the discussion topics, key questions, and identified next steps that emerged from the meeting discussion. This summary is intended to capture high-level details and key themes, rather than a transcript of the discussion.

Key references and materials are listed at the bottom of this document. For more information about the Red Abalone Project Team, 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.

Overview of the Recreational Red Abalone FMP Development Process

History of the FMP

In 2005, the Commission adopted the Abalone Recovery and Management Plan (ARMP) (here), which includes two phases of adaptive management: 1) an interim management plan, under which the fishery is currently managed; and 2) a long-term management plan. To inform the long-term management of the recreational Red Abalone fishery, a FMP process began in 2014 guided by the MLMA. In 2014, prior to the start of FMP development, a technical review was completed on CDFW's survey design and methods used for estimating red abalone density in managing the northern California recreational red abalone fishery (here). This review highlighted CDFW's valuable long-term datasets and recommended exploring alternative scientifically-based management reference points which the development of an FMP (under MLMA) will address. In 2016-17, CDFW drafted and submitted a proposed FMP management strategy to inform a chapter of the FMP to the Commission. TNC also submitted a stakeholder-proposed management strategy alternative for the Commission's consideration that same year. (Presentation available here).

Peer Review of the Management Strategies

The Ocean Protection Council (OPC) provided a grant to the Ocean Science Trust to facilitate a scientific peer review of the management strategies provided by the California Department of Fish and Wildlife (CDFW) and The Nature Conservancy (TNC)-led stakeholder team in 2018 (here). Among other things, the peer reviewers recommended that the two draft management strategies be integrated to reduce uncertainty and take

advantage of the best-available science. At its December 2018 meeting, the Commission made the following recommendations for the FMP's development: (1) address peer review recommendations to integrate the two proposed management strategies; (2) develop a *de minimis* (e.g., managed/restricted access) fishery option; and (3) develop a more comprehensive process and timeline to engage and consult with stakeholders (Presentation available here).

Administrative and Project Teams
In response to the Commission's recommendation, an Administrative Team, composed of representatives from CDFW, TNC, OPC, Commission, and the recreational Red Abalone fishing community, was established to ensure that the Red Abalone management strategy integration process occurs in a collaborative, efficient, and timely manner. The Administrative Team is also responsible for informing a revised management chapter for the FMP and supporting the Project Team.

To facilitate active stakeholder engagement, a Project Team (open to all interested members of the public, including members of the Red Abalone fishing community, Tribes and tribal communities, non-governmental organizations, scientists, resource managers, and others) was convened by the Administrative Team on May 22, 2019. The group is being facilitated by Strategic Earth Consulting, a neutral and independent facilitation team. The Project Team will discuss and provide feedback on available information and scientific analyses conducted by the modeler and affiliates to inform the management strategies integration process as well as provide input on and develop proposals for a *de minimis* fishery design. The presentation on this overview of the management strategy integration process and associated timeline (here).

The Project Team Charter (here) was discussed, updated, and approved during the May 22 meeting. The Administrative Team Charter (here) was provided as reference.

Project Team, Key Themes & Discussion Highlights

Management Strategies: Intro to Integration Tools & Guidance on Next Steps
A presentation was provided to give an overview of the status of the Red Abalone stock and data sources and share the modeling group's plans to use computer-based models and simulations to integrate the two management strategies. To ensure the Project Team will have the information and understanding required to evaluate models and outputs in the coming months, the presentation included an overview of Management Strategy Evaluation (MSE) and the utility of computer-based models. CDFW clarified that the management strategy will only consider a northern California recreational fishery. Key highlights from the discussion included:

Participants are interested in understanding what data sources are available and how to ensure data quality.

- Participants identified a variety of available data sources that could inform management efforts including: ReefCheck citizen science data, CDFW long-term time series density dataset, Creel Surveys, Oceanographic reports (ex: NOAA Upwelling Index, PDO), etc.
- Suggestions were made to consider a number of factors in data collection efforts including the size frequency and location (i.e., shallow versus deep and north-south) of the population, environmental conditions, etc.
- Recommendations were made to integrate data streams (e.g., CDFW density data, ReefCheck, and citizen science data from recreational divers and Tribes) to inform modeling efforts.
- Data-sharing and increased access to data are needed to build partnerships and increase transparency and ensure cost-effectiveness.
- Participants also identified a wish list of data sources that could support management including: Size-frequency and abundance data, enhanced recreational diver report card, reproductive indicators (e.g., gonadal data), size structure, nearest neighbor, crowdsourced underwater photos, traditional knowledge, kelp cover, chlorophyll reports, and socioeconomic data.

- Participants highlighted the need to consider the areas that are not monitored by CDFW and ReefCheck in ongoing monitoring efforts.
- If citizen science is pursued, participants highlighted the importance of standardized data collection protocols, educational training programs for participants, and consideration of the longevity and consistency of citizen science data streams.

Participants highlighted the need to ground truth the information feeding into the models to ensure the science is grounded in reality.

- Cost-effective and reliable indicators that are sensitive to environmental conditions will be key to ensuring the long-term viability and success of any management strategy.
- Scientists and the models should consider how different methods of harvesting can impact the ability of the population to rebuild. As an example, "rockpicking" of Red Abalone in the intertidal zone may have a different impact on the rebuilding potential of the stock than the harvest of Red Abalone at depth via diving.
- Participants emphasized that modeling should continue in real time once the fishery is open as a source of continued monitoring.
- Different triggers and indicators may need to be considered in Humboldt/ Del Norte counties and Sonoma and Mendocino counties due to differences in environmental and harvesting conditions.
- To ensure the model is robust, participants suggested the model be spatially explicit.
- Poaching was identified as an important parameter to be incorporated into the model.

The recommended management strategy should help the stock rebuild while also being responsive and adaptable should new issues arise that negatively impact the stock (i.e., disease, temperature, etc.).

- Understanding size structure of the population and reproductive condition of individuals is important to understand whether the existing Red Abalone are able to supply the larvae needed to rebuild the stock.
- The management of the recreational Red Abalone fishery should consider the current state of kelp cover and sea urchins.
    - CDFW highlighted the past and present work on this issue conducted by CDFW and other partners. CDFW clarified that urchin abatement and kelp cover considerations are intrinsically linked to the red abalone fishery, and that habitat management is a core element of the management strategies discussed in the draft Red Abalone FMP; however, specific urchin abatement and kelp cover initiatives will not be the focus of Project Team meeting discussions in order to advance the management strategies integration.

***De Minimis* Fishery**

Per the Commission's recommendation, the Project Team will advise CDFW on the optimal structure of a *de minimis* fishery (i.e., a fishery that does not impact a recovering stock). CDFW shared a presentation (here) to introduce the principles and options for the structure of a restricted/managed fishery for the Project Team's consideration. One of the main messages of the presentation was that the demand for Red Abalone exceeds the supply, thus requiring a restricted/managed access management approach to ensure the implementation of a *de minimis* fishery. Breakout groups were supplied with guiding questions (here) to support a robust discussion before reconvening in plenary to discuss ideas. Key highlights from the discussions included:

Priorities for management of a de minimis recreational Red Abalone fishery include, but are not limited to, ensuring recovery and long-term productivity of the stock, maximizing recreational fishing/diving opportunities, increasing the size limit, optimizing economic values to local communities, and supporting cost-effective, reliable data collection that includes more opportunities for fishermen.

- Management actions related to take of Red Abalone to support a *de minimis* fishery should allow the Red Abalone populations to continue to grow and recover. Project Team members stated that a thriving

and resilient population is priority, which will require historical data and ongoing monitoring to determine.

- The desired timeline for establishing a *de minimis* fishery ranged from as soon as possible to only when the Red Abalone stock has demonstrated recovery.
- Cost-effective data collection that spans a wide spatial and temporal resolution and incorporates recreational diver and citizen scientist observations should be a priority. Educational training programs and applications on smart devices (e.g., mobile phones) that can support measurements of Red Abalone photos are two tools to consider.
- A biofishery (i.e., allowing fishing for the sake of data collection that can inform management of the stock) could be considered to support data collection with limited fishing until the stock recovers.
- After a restricted access fishery has allowed the stocks to recover, participants would like managers to consider an open access fishery again.
- To meet these priorities, it will be important to understand what the management strategy will tell us about the fishery, what the minimum amount of take can be to allow the recovery of the stock, and a clear understanding of the tradeoffs associated with each management action.
- Concerns were expressed about the consideration of tribal fishing being characterized as recreational fishing opportunities since tribal harvest is for subsistence, not recreation. There is a need for the state to engage with Tribes on the *de minimis* Red Abalone fishery.

While a de-minimis fishery using citizen science efforts could create many benefits to management, the recovery of the resource should be paramount.

- Recreational Red Abalone diving and fishing could be used to support data collection, outreach to the public, provide revenue to CDFW to help pay for management, increase manager's awareness of ocean conditions, keep fishermen involved in the fishery, help with an urchin removal program, and help to disincentivize poaching.
- The recreational fishing report card could be updated to include size of catch, location, depth, gonad indices, body condition indices, behavior, aggregations beyond density, and general observations.
- Given the anticipated size of a *de minimis* fishery, there are likely to be challenges related to enforcement, distributing access to maximize opportunities, and poaching.
- Whether or not fishermen are a component of data collection, it will be important for all recreational fishermen, including non-English speakers, to receive some kind of training/education to ensure stewardship of the resource and responsible fishing practices.
- Suggestion that volunteer actions might be incorporated into points system for restricted access fishery, as a way to incentivize volunteers/younger generation.

There are a variety of management actions that should be explored in the development of a de minimis fishery. The Project Team is interested in exploring available proposals to inform the Administrative Team's recommendations.

- In addition to the current restrictions to the recreational Red Abalone fishery, managers could consider limited entry, total allowable catch for the entire fishery, daily or yearly bag limits, raising the minimum size limit, party tags for groups to fish together, area-specific permits, etc.
- Management actions must consider safety concerns. For example, if fishermen are given a timeframe in which they are allowed to fish, they are likely to fish in unsafe conditions so they do not miss an opportunity to fish. Additionally, party or group fishing tags where applicants can receive fishing access in groups to encourage safe diving practices.
- Development of a best practices guide for fishing together with other educational opportunities (e.g., an online educational program, fishing with tribes and other experienced divers, etc.) will be important to ensure management actions are clear to fishermen and fishermen understand the need for stewardship.
- Design of a *de minimis* fishery should consider tools to minimize enforcement costs and complexity and could include a single defined time and area for the fishery. Additionally, it will be important for

management regulations to clearly define terms (e.g., rock picking) to ensure clear intent of any new regulations related to the *de minimis* fishery.
- Restricted access as well as reporting and data collection should be a mandatory components of the *de minimis* fishery.

Develop Project Team Work Plan

A work plan (here) was developed to outline a timeline and next steps for the Project Team. This will be a living document that will be updated and refined to reflect progress, next steps, and tasks of the Project Team. The Project Team added a deadline (before the July 2019 Project Team meeting/webinar) to receive proposals and ideas related to the red abalone FMP to ensure they can be carefully considered and reviewed by the Project Team. Participants also provided suggestions for meetings and webinars including scheduling considerations, timing, structure (e.g., the need for breakout groups, etc.), remote meeting locations (i.e., nodes), and communications of the Project Team between in-person meetings and webinars. The work plan has been updated and the Administrative Team is continuing to explore the recommendations provided by participants.

Next Steps

- The Project Team and general public are invited to email proposals to hello@strategicearth.com for the Project Team's consideration. All proposals must be received no later than the July 2019 Project Team meeting to be considered by the Project Team.
- Project Team participants should be thinking through the available data streams and how to prioritize the use of indicators in an integrated management strategy, as well as management approaches for a *de minimis* fishery.
- Peer review recommendations will guide the work of the modeler and affiliates. This group will revise the operating model and design several proposed strategies with different indicators for the Project Team's consideration during future meetings.
- The Administrative Team will develop a glossary of terms and consider capacity to develop a FAQ document to support inclusive communications and will consider options for nodes/remote locations for public participation in webinars, how to support Project Team communications between meetings, and options for improving remote participation experience. The Administrative Team is responsible for reporting to the Marine Resource Committee and any other group that the Commission deems appropriate.
- Strategic Earth will send materials, data, and other Project Team requests via email and will work with the Administrative Team and Project Team to track all next steps. Strategic Earth will keep the Project Team informed of upcoming meetings.

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:

- May 22, 2019 Project Team Meeting agenda (here)
- Project Team Work Plan (here)
- Project Team Charter (here)
- Presentations
    - Red Abalone FMP Development Process (here)
    - Peer Review Summary (here)
    - Red Abalone Management Strategy Integration Process Overview (here)
    - Restricted Access Fishery Possibilities (here)
- 2018 California Ocean Science Trust Recreational Red Abalone Fishery Peer Review webpage (here)
    - Peer review report (here)

- Recommendations from December 2018 Fish and Game Commission meeting (here)
- CDFW Red Abalone Fishery Management Plan webpage (here)
- 2014 Scientific and Technical Review of the Survey Design and Methods Used by CDFW to Estimate Red Abalone (Haliotis rufescens) Density (here)
- 2005 Abalone Recovery and Management Plan (here)
- Worksheet from Breakout Group Discussions during Project Team Meeting (May 22, 2019) (here)