

# **Kelp Restoration and Management Plan Community Working Group Meeting #3 Summary**

**Monday, August 12, 2024**  
**1:00 pm - 5:00 pm PST**

## **Attendees**

Claire Arre, MPA Collaborative Network  
Capt. David Bacon, WaveWalker Charters, Coastal Conservation Association  
Kathryn Beheshti, University of California, Santa Barbara  
Doug Bush, The Cultured Abalone Farm LLC  
Grant Downie (member and Anna Neumann's alternate), Commercial Sea Urchin  
Diver Gary Fleener, Hog Island Oyster Company  
Jan Freiwald, Reef Check California  
Jess Gravelle, Trinidad Rancheria  
Jacob Harris, Ocean and Coastal Stewardship Program Manager at Amah Mutsun Land  
Trust Rietta Hohman, Greater Farallones National Marine Sanctuary (NOAA Affiliate)  
James Jungwirth, Naturespirit Herbs LLC  
Tristin Anoush McHugh, The Nature Conservancy  
Tyler McKinney, Monterey Bay Scuba  
Anna Neumann, Noyo Harbor District  
Andrea Paz-Lacavex, University of California Santa Cruz  
Dave Rudie, California Sea urchin Commission  
Joshua Russo, Watermen's Alliance  
Javier Silva, Sherwood Valley-Noyo Pomo  
Marc Shargel, Living Sea Images  
Severino Gomes Alternate, Kashia Band of Pomo Indians  
Patrick Webster, Underwater Photographer

## **Absent<sup>1</sup>**

Emily Burgueno, Kumeyaay Nation (Iipay Nation of Santa Ysabel)  
Tom Ford, The Bay Foundation  
MariaElena Lopez, Coastal Band of the Chumash Nation

## **Overview**

The third virtual meeting of the Kelp Restoration Management Plan (KRMP) Community Working Group (CWG) was held on August 12, 2024, with twenty-one KRMP CWG Members, and the KRMP Project Team (i.e., California Department of Fish and Wildlife (CDFW), Ocean Protection Council (OPC), and Strategic Earth Consulting). Background materials and an agenda were shared in advance to help support a productive meeting (see Appendix). CDFW, in partnership with OPC, provided a presentation and context that informed and supported plenary and break-out group discussions focused on restoration.

<sup>1</sup> Only those who were absent and did not send an Alternate in their place are listed here.

## KRMP CWG Updates

CDFW gave updates related to the KRMP process and components. The Science Advisory Committee (SAC) met in April 2024 to discuss components of the kelp forest socio-ecological system and identify a comprehensive list of possible indicators of kelp forest ecosystem health. The SAC is also working on prioritizing key, measurable indicators (i.e., abiotic, ecological, economic, etc.) that can inform the status of kelp forest ecosystems and when management actions are necessary. CDFW and OPC shared that they are working to coordinate a future discussion between the SAC and CWG after hearing various CWG Members reiterate the importance of conversations between the two groups.

In July 2024, the KRMP team hosted a Tribal Community Virtual Forum (Forum) where Tribal members, representatives, and organizations came together to discuss Tribal priorities and considerations when developing the KRMP. CWG Tribal representatives who attended the Forum shared their high-level takeaways.

## Kelp Restoration Setting the Stage

CDFW and OPC provided an [overview of kelp restoration goals, approaches](#), and a draft toolkit being explored for the KRMP (see slides 9-17). Additionally, the state provided framing for the type of feedback they are looking to gather from the CWG to inform the KRMP. Various CWG Members expressed interest in discussing artificial reefs as a KRMP restoration tool; however, CDFW and OPC explained that an artificial reef program would need to be developed through the California Artificial Reef Program (CARP) process. While linkages to kelp restoration may be discussed, the development of the CARP Plan will ultimately determine the policy and decision-making framework for artificial reef placement in California. For more information about CARP, please contact Cyndi Dawson at [ArtificialReefs@Wildlife.ca.gov](mailto:ArtificialReefs@Wildlife.ca.gov).

## Factors & Criteria to Determine the Need for Restoration

CWG Members were assigned to small groups to discuss the following guiding questions:

- Describe the conditions under which restoration of a kelp forest is necessary. Be specific. Include considerations for a hypothetical site in different places along the California coastline.
- What social and community considerations are important for evaluating the need for and success of restoration efforts in an area?
- How can kelp restoration projects be inclusive and benefit your community?

Key high-level takeaways from the conversation include:

- Before identifying a site for restoration, managers should look at the underlying reasons why the kelp is not recovering and evaluate the need for restoration.
- More data on kelp ecosystems is needed, including but not limited to:
  - Identifying stressors to kelp ecosystems (e.g., increased water temperatures, invasive species (i.e., *Sargassum*), and increased grazer presence (i.e., sea urchins)),
  - Human and land-based impacts on kelp ecosystems (e.g., runoff),
  - Baseline data, including traditional ecological knowledge (TEK), of kelp cover and long term health (i.e., via satellite, human tracking, etc),
  - More data from harder-to-access sites, especially those in the North Coast, and
  - Self-correcting capabilities of kelp systems.
- Prior to restoring a site, control locations should be identified to compare the efficacy and effectiveness

of restoration efforts.

2

- Before selecting a restoration technique, it is important to know if the initial (or other) kelp stressor(s) are present so the stressors are not hindering restoration.
- Various CWG Members expressed the need for restoration techniques to be tailored to specific sites. Some site-selection considerations include:
  - Has promising environmental conditions (i.e., cold water, limited grazer & invasive species pressure),
  - Is easily accessible (i.e., road access, proximity to community & recreational volunteer communities, distance from scientific facilities), and
  - Empowers and supports a wide range of local communities to rally and take action (specifically disadvantaged communities as well as commercial and recreational users).
- The state of California should identify restoration goals and guidelines, in collaboration with nongovernmental organizations (NGOs), to standardize the restoration process and ensure the success of the effort can be evaluated.
- Restoration should be prioritized when kelp loss occurs as the result of a catastrophic anthropogenic event (e.g., oil spill).
- The KRMP should streamline the restoration process (e.g., providing funding support, streamline inter-agency communication and dynamics, removing permitting hurdles, and removing boating license permit requirements to assist in restoration-specific efforts).
  - A new permit category should be developed for Tribal use instead of binning Tribal use with recreational permits.
- Interest was expressed in exploring restoration within state marine protected areas (MPAs) and state reserves, where restoration impacts will be more noticeable because the areas are already heavily protected. Other CWG Members believed restoring areas outside MPAs was a higher priority.
- Social and community impacts of restoration projects should be considered when determining the need for restoration, including socioeconomic benefits, ecosystem services, increased recreational opportunities, etc.
- Prioritize sites close to access points (e.g., piers, populated beaches) to garner community support. ● Education programs (e.g., town halls, school-based K-12 curriculum) were suggested to help educate the public about healthy kelp ecosystems and restoration efforts to gather public feedback and encourage public participation in kelp restoration.
- Local communities should be empowered to take an active role in kelp restoration. ● Kelp stewardship and restoration are high priorities for Tribes, and Tribes should be engaged in restoration discussions and implementation.

### **Kelp Restoration Approaches**

CDFW, in collaboration with OPC, introduced the [various restoration approaches](#) (see slides 12-16) currently under consideration in the draft KRMP “restoration toolkit.”



The slide features a header with the California Department of Fish and Wildlife logo and the text 'CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE'. The main title is 'Kelp Restoration Approaches'. Below the title, there are three main bullet points, each with sub-bullets. The first bullet point is 'Grazing pressure' with sub-bullets: 'remove/reduce from system', 'move/relocate', 'modify grazer behavior', and 'move/relocate grazer predators'. The second bullet point is 'Competitive species' with sub-bullets: 'remove/reduce from system' and 'move/relocate'. The third bullet point is 'Kelp supply/availability' with sub-bullets: 'add', 'move/relocate', and 'genetic resilience'. Below these, there is a fourth bullet point: 'Other approaches'. At the bottom right, there are two small photographs of kelp. The left photo shows a close-up of kelp fronds, and the right photo shows a close-up of a sea urchin. Below the photos is the text 'Photos by Kristen Damore, CDFW' and a small number '11'.

Figure 1: Kelp restoration approaches currently under consideration in the draft KRMP “restoration toolkit.” CWG Members were assigned to breakout groups to discuss the following guiding questions before returning to share highlights in plenary:

- How do the proposed restoration approaches and concepts below align with your community's needs and values? How can they be better tailored to fit your community?
- Can you share observations about successful past or current kelp restoration approaches in your area? Why was it successful?
- How can management tools be tailored to accommodate the restoration needs of both bull kelp and giant kelp? Are there any missing?

Key high-level takeaways from the conversation include:

- Before selecting a restoration approach, managers should be clear on restoration targets and tools needed to accomplish restoration goals.
- All restoration techniques outlined could be appropriate in the correct context. However, they would need to be evaluated on a case-by-case basis and only applied when considering the cause(s) of kelp decline, community considerations, environmental nuances, etc.
  - Sea urchin culling (i.e., killing or removing sea urchins from an area) was discussed in detail throughout the CWG Meeting as many participants had experience with or had observed this tool. Some CWG Members shared that culling sea urchins is the most effective restoration technique, and smashing urchins underwater may be able to return nutrients to the ecosystem. However, sea urchin culling should not be wasteful and should consider where to displace killed sea urchins. Other CWG Members cautioned about sea urchin culling because they don't believe it is the most efficient or cost-effective technique, especially for large areas, and it could lead to urchin and coastal farming practices. A CWG Member raised ethical concerns about sea urchin culling.

- In addition to the draft restoration techniques shared by CDFW, other restoration approaches that were discussed include: artificial reefs, imposing defensible boundaries such as fences or urchin pins to reduce or prevent grazer migrations, reintroduction of sea urchin predators (i.e., sunflower stars), help seed kelp spores in areas where there is a need to increase heat resistant kelp, and adding substrate for kelp to naturally establish.
- “No management intervention” should also be considered as a restoration tool.
- Restoration success could vary by species (i.e., bull vs giant kelp).
  - When thinking about what made restoration projects successful, CWG Members explained:
    - Baseline/historical ecological data coupled with a control site should be available for any site being considered for restoration so that success can be measured.
    - It is important to engage with and educate local communities and scientific groups working in the area. Solid community support and volunteer networks are critical to ensuring restoration is successful.
    - Before beginning restoration, environmental conditions should be capable of supporting restoration efforts and future climate resiliency.
    - Projects with funding or economically self-sufficient should be prioritized so the restoration efforts are not hindered and delayed due to a lack of available resources.

The SAC has not yet discussed the restoration approaches/toolkit. The CWG will revisit these draft restoration approaches at a future date. Following the SAC’s discussion around the science of these restoration approaches, CDFW and OPC anticipate sharing outputs from the SAC with the CWG to inform the CWG’s recommendations.

### Looking Forward

The KRMP CWG is anticipated to have an [upcoming virtual meeting](#) (see slide 21) in late 2024 or early 2025, where they will revisit discussions around Ecosystem-Based Management, have more detailed discussions around kelp harvest, and continue to make connections to restoration. Additional meetings are planned for 2025, and their timing, focus, and goals will be determined when more information is available. This meeting summary and future outcomes from CWG meetings will be shared with CDFW and OPC to ensure community insights are incorporated into the KRMP. The summary will also be shared with the SAC for continuity between the two groups.

Meetings will be informed by, and help inform other KRMP-related discussions, including, but not limited to, the KRMP SAC meetings, Fish and Game Commission meetings, OPC meetings, and Tribal Roundtable Listening Sessions.

If you have questions or comments, would like additional information, or would like to request Tribal consultation on the KRMP, please contact [kelp@wildlife.ca.gov](mailto:kelp@wildlife.ca.gov). Updates, informational materials, upcoming opportunities, and events will be highlighted on the [KRMP Website](#).

### Next Steps

CWG Members will continue to review background materials already circulated (see Appendix), review materials that will be circulated before the next CWG meeting, and liaise with their communities to ensure their broader community perspectives are incorporated into each CWG meeting discussion.

## Appendix

# Kelp Restoration and Management Plan Community Working Group Meeting #3 Agenda

**Monday, August 12, 2024**

**1:00 pm - 5:00 pm PST**

### Meeting Goals

- Receive updates on the Community Working Group (CWG) schedule and anticipated discussion topics for 2024-25 meetings and share updates on the KRMP process.
- Identify and brainstorm a list of factors and criteria around community and social priorities for kelp restoration across California.
- Discuss, review, and share perspectives around the social context of restoration approaches.
- Develop the foundation for future recommendations from the CWG to inform the KRMP.

### Welcome, Introductions and Community Building

*Confirm meeting goals and intentions and walk through the agenda.*

### KRMP CWG Updates

*California Department of Fish and Wildlife (CDFW) and Ocean Protection Council (OPC) to provide updates on the KRMP process, future CWG meetings, connections with Tribal engagement efforts and the SAC, updates to FGC committees, OPC, etc.*

### Kelp Restoration Setting the Stage

*CDFW and OPC to provide an overview of kelp restoration in California, including approaches being explored, approaches that are outside the scope of the KRMP, etc. CDFW and OPC will also provide framing for the type of feedback they are looking to gather from the CWG to inform the KRMP.*

#### Available Resources

- [Giant Kelp and Bull Kelp Enhanced Status Report](#) (especially Section 3.1 Management; Tables 3-2 and 3-3)
- [November 2023 CDFW and OPC Report: Status of Research and Monitoring, Restoration Efforts and Developing Management Strategies for Kelp Canopy Forming Species in California](#) (especially pages 17-31)
- [Sonoma-Mendocino Bull Kelp Recovery Plan](#) (especially pages 24-32; Tables 1 and 2)
- [Kelp Restoration Guidebook](#)
- [2024 Accelerating Kelp Research and Restoration in California Project Descriptions](#)

### Factors & Criteria to Determine the Need for Restoration

*CWG members break into small groups to discuss community perspectives and provide guidance on the conditions of when/where restoration may be called for across California kelp forests. CWG members to*

*return and share highlights in plenary.*

### **Guiding Discussion Questions**

CWG members to discuss the following questions with your communities and bring their perspectives to the meeting discussion.

- Describe the conditions under which restoration of a kelp forest is necessary. Be specific. Include considerations for a hypothetical site in different places along the California coastline.
- What social and community considerations are important for evaluating the need for and success of restoration efforts in an area?
- How can kelp restoration projects be inclusive and benefit your community?

### **Kelp Restoration Approaches**

*CWG members break into small groups to provide perspectives on the effects of restoration to their communities. CWG members to return and share highlights in plenary.*

### **Guiding Discussion Questions**

CWG members to discuss the following questions with your communities and bring their perspectives to the meeting discussion.

- How do the proposed restoration approaches and concepts below align with your community's needs and values? How can they be better tailored to fit your community?
- Can you share observations about successful past or current kelp restoration approaches in your area? Why was it successful?
- How can management tools be tailored to accommodate the restoration needs of both bull kelp and giant kelp? Are there any missing?

### **Draft Restoration Approaches**

- Management of grazing pressure (*including but not limited to removing/reducing from system, moving/relocating, modifying grazer behavior, moving/relocating grazer predators*)
- Management of kelp supply/availability (*including but not limited to adding, moving/relocating, genetic resilience*)
- Management of competitive species (*including but not limited to removing/reducing from the system, moving/relocating*)
- Other approaches for future considerations (*including but not limited to artificial reefs*)

### **Looking Ahead and Adjourn**

*Strategic Earth, in partnership with CDFW and OPC, will review next steps and opportunities for continued CWG communication and engagement.*