



Kelp Restoration and Management Plan

Community Working Group & Science Advisory Committee

Wednesday, May 21, 2025

8:30am - 4:00pm PST

Justice Joseph Rattigan Building, Santa Rosa, CA



Meeting Goals & Outcomes

Today's Goals



- Build alignment and collaboration between CWG and SAC
- Explore how science and community input can shape the KRMP
- Share knowledge through focused, two-way discussions

Today's Intended Outcomes



- Clarify CWG and SAC roles in KRMP development
- Define what a “kelp-connected community” means and identify community partners and impacts



Meeting Agreements

- Be present
- Be prepared to discuss agenda items constructively
- Share if you need to leave early
- Approach discussions from a place of diversity and inclusion
- Focus discussions on strategies and solutions that move conversations forward
- Listen for understanding and seek clarification
- Identify any personal/professional conflicts of interest
- Do not work at cross-interests with the group's goals and objectives
- Personal attacks will not be tolerated
- Take space, make space



Introductions: Project Team

- **California Department of Fish & Wildlife:** Kristen Elsmore, Rebecca Flores Miller, Adam Frimodig, Kirsten Ramey, Shelby Kawana
- **Ocean Protection Council:** Hallie Brown, Pike Spector
- **California Sea Grant:** Ashleigh Palinkas, Erin Satterthwaite, Theresa Talley, Shauna Oh
- **Strategic Earth Consulting:** Noelia Aponte-Silva, Rachelle Fisher, Sara Gené, Teresa Romero



Introductions: CWG & SAC Members

Please share:

- Your Name
- Affiliation/Sector
- Region (North, Central, or South Coast)
- Connection/Expertise (Giant, Bull, Both)
- Intention for today's meeting



Photo by Kristen Elsmore, CDFW



Meeting Agenda

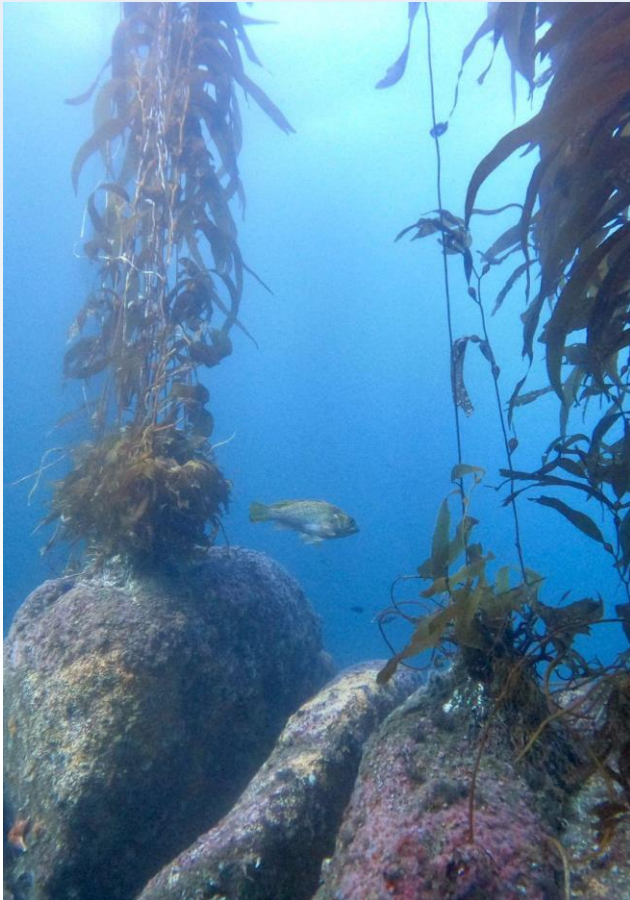
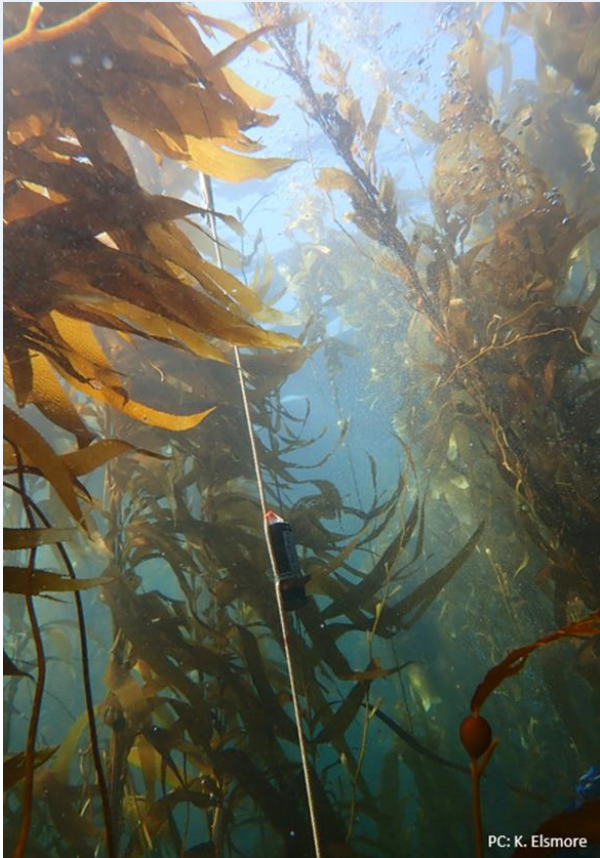


Photo by Shelby Kawana, CDFW

- Welcome, Introductions, and Community Building
- Setting the Stage with the KRMP Project Team
- Updates from the SAC & CWG
- Discussion: Kelp Ecosystem Health
- Lunch & Poster Hall



Meeting Agenda Continued



- Discussion: Kelp Management & Restoration Priorities and Capacity
 - Discussion: Community-Supported Research, Management, and Engagement Opportunities
 - Looking Ahead & Adjourn
- *Optional Gathering at Russian River Brewing Company*



Setting the Stage

KRMP Components

- Innovative, overarching, adaptive, **ecosystem-based management framework**
- **Harvest management framework** and other Fishery Management Plan elements required by the Marine Life Management Act
- **Restoration Toolkit**

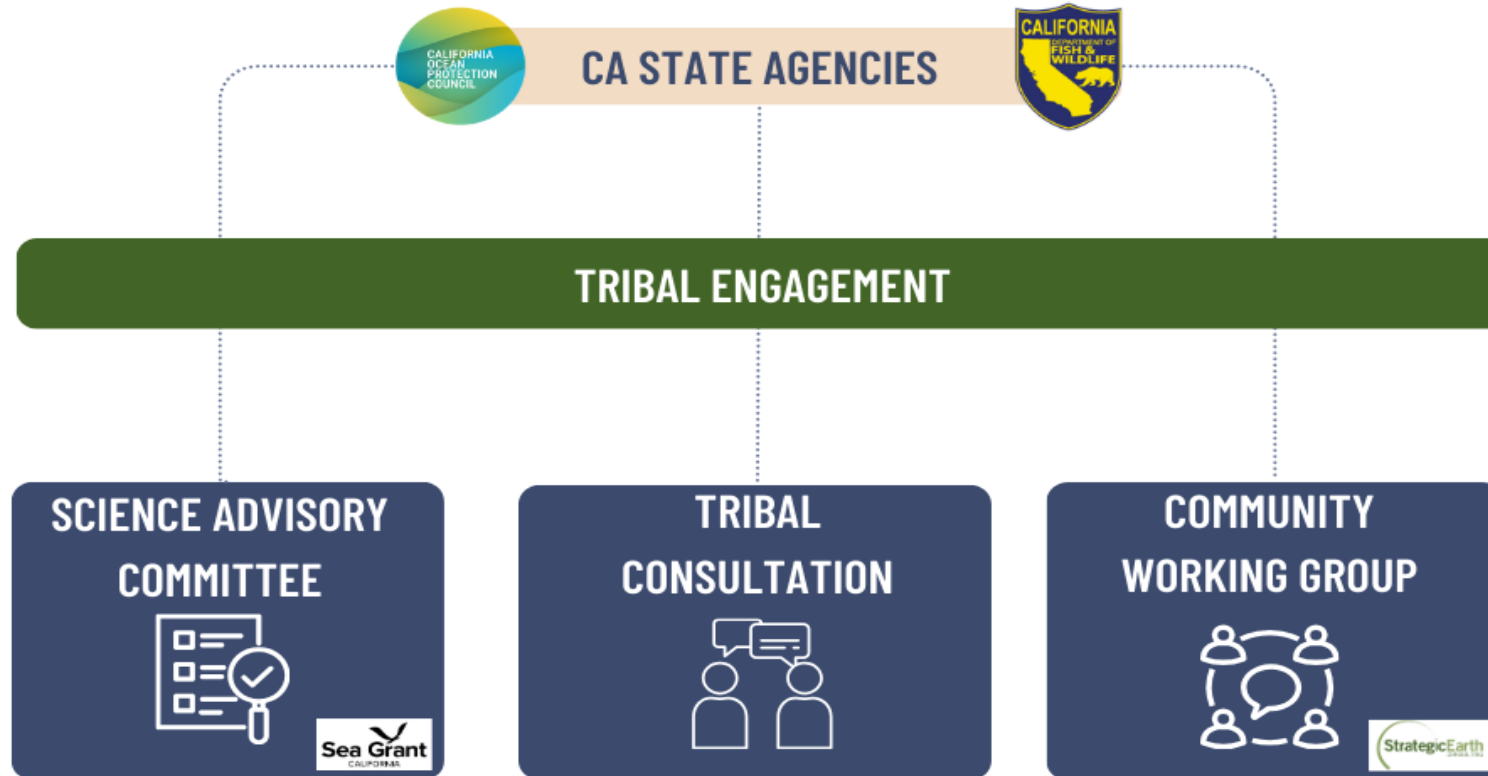


Photo by Kristen Elsmore, CDFW



Setting the Stage: Roles

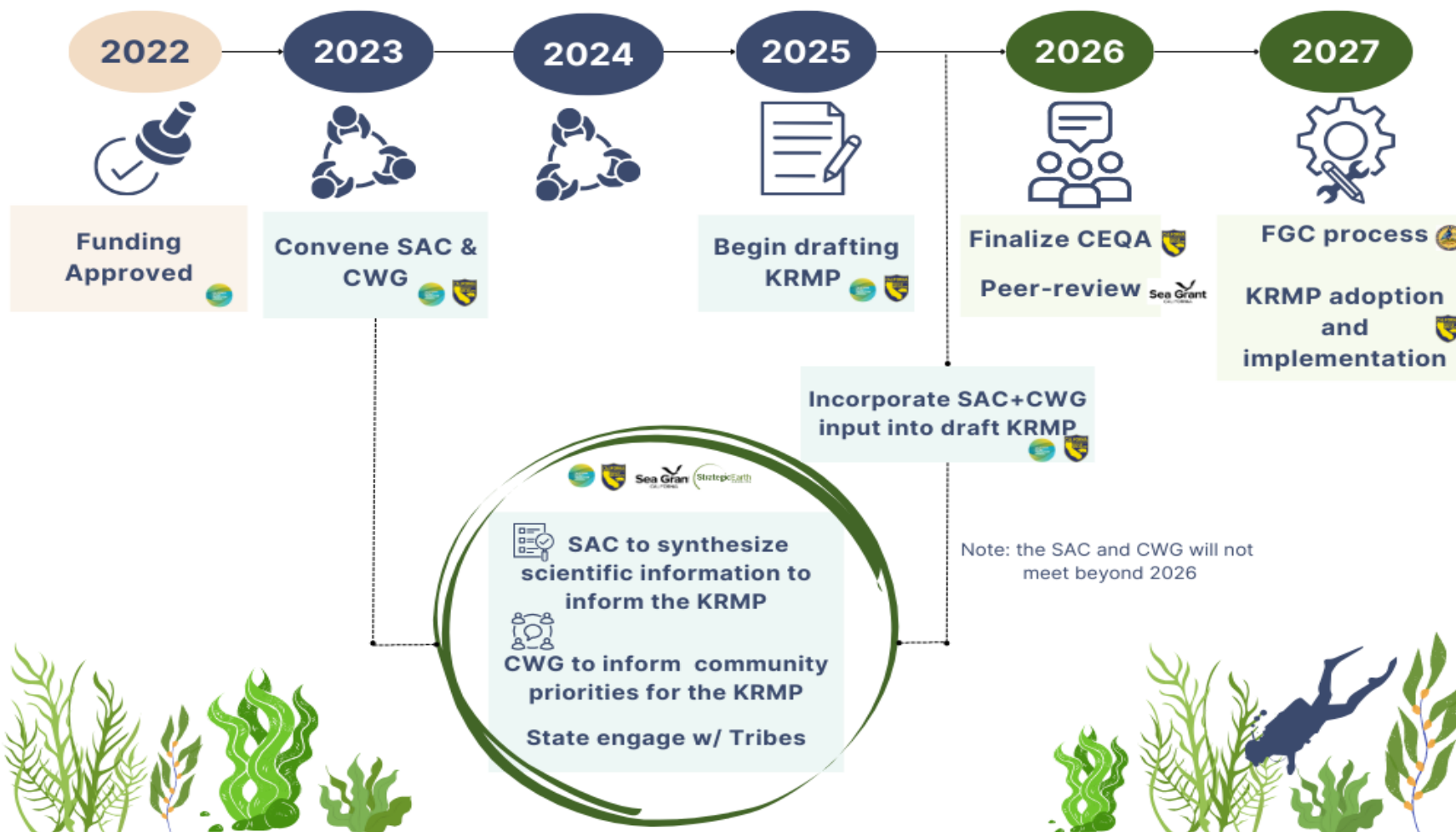
HOW IS THE KRMP BEING DEVELOPED?





Setting the Stage: Timeline

KRMP DEVELOPMENT TIMELINE





Setting the Stage – The How



Science Advisory
Committee

Tribal
Consultation

Community Working
Group



2023-2026

Recommendations informing the KRMP



On the Ground
Research

2025 - 2026

KRMP Drafting, CEQA, Peer
Review, and Finalization

2026 - 2027

Management Plan and
Regulatory Process



2027

Implementation



THANK YOU!
Do you have any questions?

Photos by Kristen Elsmore, CDFW



What is the SAC?



Function

- An independent body tasked with providing scientific expertise on all aspects of the KRMP to ensure the best available and most current science is directly integrated into the KRMP.

Who is the SAC?

- Experts in natural and social sciences, economics, and local and traditional knowledges, spanning a broad scope of disciplines and geographic areas.



SAC Updates: 2023



Introduction to the KRMP

- Overview of KRMP
- SAC's roles and responsibilities

Build a shared conceptual framework for California's kelp socio-ecosystem

- Explored example frameworks that incorporate ecological and social aspects
- Integrated kelp-specific details into a framework for shared understanding of system
- Considered different pressures that can influence the kelp socio-ecological system, drivers of change to the system, metrics to inform these drivers



SAC Updates: 2024



Identify indicators to assess the health of the kelp resource:

- External and internal pressures, landscape connectivity, ecological states for kelp and associated communities, social states pertaining to community, management, and governance

Prioritize key indicators & identify associated measurable variables:

- Ocean temperature, kelp forest structure and canopy abundance, recovery metrics, with a focus on temporal scaling
 - Considerations for prioritization: relationship among indicators, regional context, redundancy across categories, spatial and temporal scaling

Refine variables & identify existing monitoring programs and datasets to assess the state of kelp



SAC Updates: 2025



Define kelp status & indicator thresholds

- Discussed framework for kelp social-ecological system status: based on current kelp state (health) and potential for change (trends and forecasts of pressures)
- Discussed attributes (e.g., timescales, uncertainty, regional considerations) of reliable and actionable thresholds for informing kelp status and guiding decisions for management strategies; indicator thresholds delineating kelp status are still being evaluated

Identify & evaluate management strategies

- Discussed and refined draft list of management strategies and corresponding actions for each (e.g., elements of restoration toolkit)
- Considered management strategy (decision-tree) - the specific suite of management actions appropriate for a given kelp status



SAC Updates: Looking ahead



Continued and future work includes the following:

- Evaluate potential restoration tools and approaches to include in the Restoration Toolkit; evaluating for efficacy, scalability, and cost-effectiveness
- Evaluate potential Harvest Frameworks (e.g., quotas, harvest control rules)
- Evaluate efficacy, cost-effectiveness, and appropriate application of other management strategies
- Integrate full management framework & scenario planning
- Reflect on potential conceptual and content gaps; address as time allows



THANK YOU!
Questions?

Photos by Kristen Elsmore, CDFW



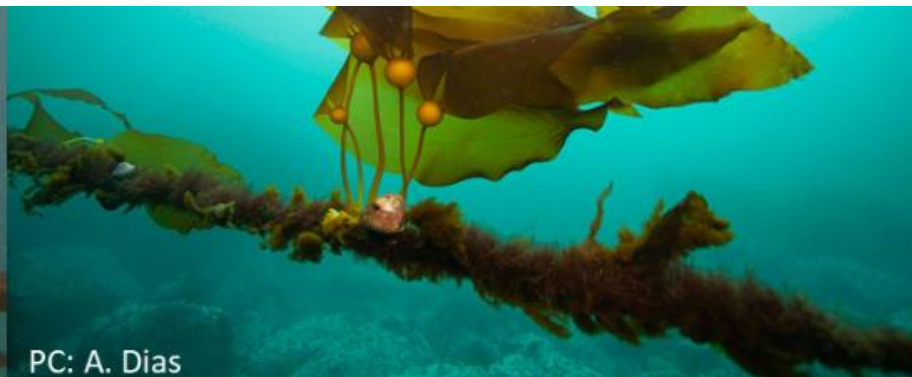
CWG Updates

March 2024: Ecosystem-Based Management

- Prioritized understanding **ecosystem functions** and key stressors (e.g., **heatwaves, storms**)
- Called for **region-specific kelp restoration** and **inclusive, community-based monitoring**
- Emphasized need for better data on stressors, **remote site monitoring**, and integration of **Traditional Ecological Knowledge (TEK)**



PC: S. Kawana



PC: A. Dias



PC: K. Elsmore



CWG Updates, Cont'd

August 2024: Restoration Approaches and Success Factors

- Supported **site-specific restoration** aligned with **community values** and ecological context
- Discussed methods: **urchin culling, predator reintroduction, kelp seeding**
- Identified success factors: **baseline data, community support, climate resilience**, and use of **control sites**



Photo by Rebecca Flores Miller, CDFW



CWG Updates, Continued



Photo by Kristen Elsmore, CDFW

Dec 2024: Harvest Management and Strategies

- Supported **custom permits** for Indigenous, subsistence, and research harvests
- Emphasized **Tribal-led and co-management models** blending Western science and TEK for culturally appropriate harvesting
- Highlighted need for **recreational harvest data**; commercial harvesters prioritized addressing **environmental stressors** over new limits
- Backed **temporary closures**, with concerns for **impacts to Tribal harvests**
- Noted **OPC-funded research** on harvest effects and kelp genetics



THANK YOU!
Any Questions?

Photos by Kristen Elsmore, CDFW



Discussion: Kelp Ecosystem Health



Photos by Kristen Elsmore, CDFW

- How can all forms of information (e.g., Tribal science, western science, community observations) be used to assess the health of kelp ecosystems?
- What kelp changes have already or would affect your communities (i.e., what key variables should be monitored and assessed)?
- What would trigger a management response? Are some observed changes in a kelp ecosystem more critical or urgent than others, and if so, what temporal or spatial scales of change would warrant a response?
- How can the community and scientific community sound the alarm to managers when they notice changes?



Lunch & Poster Hall



Browse the “poster hall” and engage in conversations with CWG and SAC members to learn about important projects related to kelp in California!

Photos by Kristen Elsmore, CDFW



Activity: Management Strategies

- **Harvest framework**
 - Species, seasonality, region, method
- **Restoration tools**
 - Managing grazing pressure, kelp spore supply, competitive species
- **Research to inform adaptive management**
 - Knowledge gaps, emerging restoration tools, climate-readiness

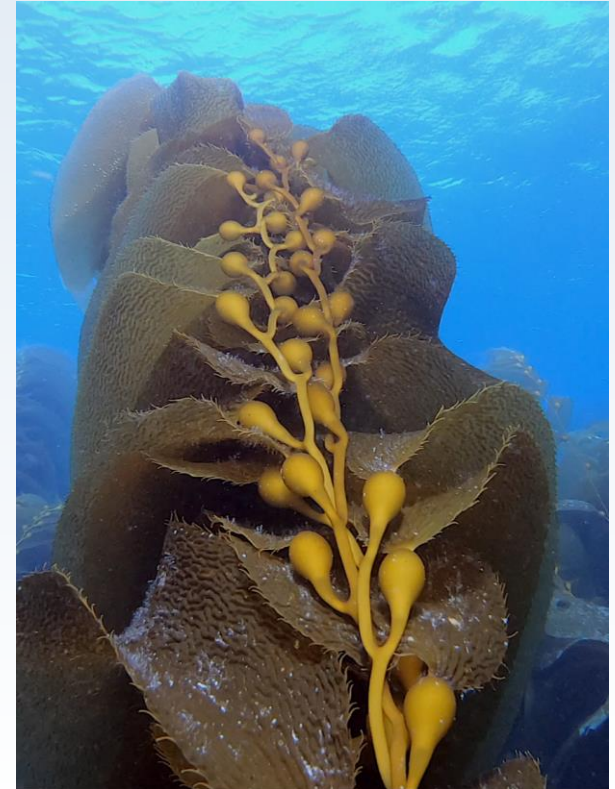
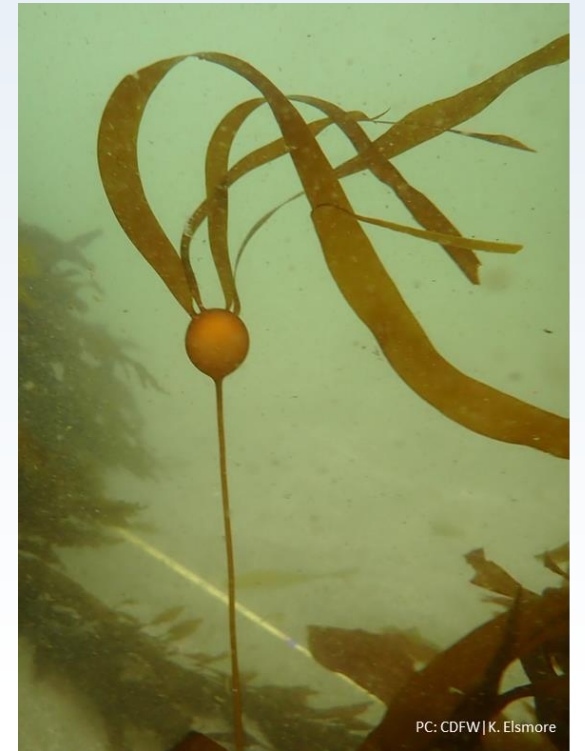


Photo by P. Spector, OPC



Discussion: Management Priorities & Capacity

- What are your group's top kelp priorities (e.g., research needs, restoration goals, use of restoration as a management strategy)?
- How can the KRMP help build capacity in communities and the scientific community to support kelp restoration?
- How can communities and the scientific community support restoration priorities, management goals and capacity needs?





THANK YOU!
Questions or Comments?

Photos by Kristen Elsmore, CDFW



Discussion: Community Support & Opportunities



Photos by Kristen Elsmore, CDFW

- How can community monitoring (e.g., citizen science, observations on the water, etc.) connect and enhance research and scientific monitoring?
- What role can Tribal-led efforts play in monitoring, and management?
- What are the best methods for your community to share observations, data, and concerns with managers and scientists (e.g., community surveys, feedback sessions)?
- How different management strategies impact local communities socially and economically? How can these be considered in the KRMP?
- How can the community be informed about the KRMP and kelp research?



Looking Ahead & Adjourn



- Next steps
 - Circulate meeting summary to both groups next month
 - KRMP update at MRC meeting in July 16-17
 - Share your feedback, lingering thoughts, and ideas
- Join Us!
 - 6:00pm at Russian River Brewing Co., 725 4th Street



PC: S. Kawana



PC: A. Dias



PC: K. Elsmore

An underwater photograph of a kelp forest. The image shows several kelp stalks with large, rounded, brownish-orange bulbous structures (likely kelp bladders or pneumatocysts) and long, thin, greenish-brown blades. The water is a clear, light blue, and the lighting is soft, creating a serene underwater atmosphere. The text "THANK YOU!" is overlaid in white, bold, sans-serif capital letters on the right side of the image.

THANK YOU!

Photo by Shelby Kawana, CDFW