



**Staff Recommendation**

October 6, 2022

**Action Item:**

**Consideration and Approval of Disbursement of Funds to Initiate  
Development of a Kelp Restoration and Management Plan for  
California**

Michael Esgro, Senior Biodiversity Program Manager & Tribal Liaison

**Recommended Action:** Staff recommends that the Ocean Protection Council approve the disbursement of up to \$616,500 to Strategic Earth Consulting and up to \$597,552 to California Sea Grant to initiate the development of a statewide, climate-ready Kelp Restoration and Management Plan for California.

**Location:** Statewide

**Strategic Plan Goals and Objectives:** Goal 3: Enhance Coastal and Marine Biodiversity; Objective 3.2: Restore and Protect Kelp Ecosystems

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**Exhibits:** Letters of Support

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**Findings and Resolution:**

Staff recommends that the Ocean Protection Council adopt the following resolution pursuant to Sections 35500 et seq. of the Public Resources Code:

“The California Ocean Protection Council (OPC) hereby approves the disbursement of up to \$616,500 to Strategic Earth Consulting and up to \$597,552 to California Sea Grant to initiate the development of a statewide, climate-ready Kelp Restoration and Management Plan for California.

This authorization is subject to the condition that prior to disbursement of funds, Strategic Earth Consulting and California Sea Grant shall submit for the review and approval of the Executive Director detailed work plans, schedules, staff requirements, budgets, and the names of any contractors intended to be used to complete the projects, as well as discrete deliverables that can be produced in intervals to ensure the projects are on target for successful completion. All projects will be developed under a shared understanding of process, management and delivery.”

### **Executive Summary:**

In recent years, California's coast has been devastated by climate-driven declines in kelp. Kelp loss, particularly in northern California, has resulted in significant negative impacts on biodiversity and ecosystem services. In response, OPC has invested heavily in pilot research and restoration projects to monitor kelp forest health, improve understanding of kelp loss and persistence, and test kelp restoration methods. However, building on this pilot work to create a cohesive strategy for proactive, climate-ready kelp management remains an urgent need. To address this need, OPC and the California Department of Fish and Wildlife (CDFW) are seeking to develop a statewide, ecosystem-based Kelp Restoration and Management Plan (KRMP). The KRMP will provide approaches for managing, protecting, and restoring kelp forests in the face of changing ocean conditions.

Staff recommends that OPC authorize the disbursement of funds to initiate the development of the KRMP, which will include two distinct but related initiatives: overall project management and facilitation, which will be led by Strategic Earth Consulting, and integration of the best available science, which will be led by California Sea Grant. Strategic Earth will provide overarching strategic planning and project management support, facilitate meaningful engagement with California Native American tribes, and engage stakeholder communities. California Sea Grant will convene and administer a Science Advisory Committee for the KRMP, compile and synthesize relevant scientific information, and administer peer review of the KRMP.

OPC and CDFW envision the KRMP as a groundbreaking document that meets the urgency of the climate crisis with bold and innovative management strategies. The funding recommended here is a critical first step toward that objective. This investment will build on OPC's prior work in this area, improve statewide cohesion and coordination, and ensure that the final KRMP is not only informed by the best

available science, but also responsive to the needs of tribes and stakeholders, ultimately helping to protect our state's underwater forests and the communities that rely on them.

## **Background & Project Details:**

California's iconic kelp forests are among the most productive and biodiverse ecosystems on the planet. Giant kelp, which dominates in southern and central California, and bull kelp, which dominates in northern California, are both foundational species that provide a variety of ecological functions and ecosystem services. Kelp forms complex habitat, hosts a diversity of marine organisms, and serves as an important food source. Kelp also likely provides important climate resilience benefits, such as buffering shorelines against waves and storms and potentially helping to mitigate the impacts of ocean acidification. Finally, kelp is critical to the well-being of California's coastal residents, including California Native American tribes, as well as the state's \$44 billion ocean economy.

In general, California's nearshore environment has supported healthy kelp forests for decades, prior to the onset of a severe marine heatwave in the Northeast Pacific that started in 2014 and persisted through 2016. As a result of warm waters and other climate-driven impacts (which included the emergence of sea star wasting disease, the loss of nearly 6 billion predatory sunflower stars, and a resulting explosion in kelp-eating purple sea urchin populations), bull kelp forests in northern California were decimated. More than 95% of the bull kelp canopy off of Mendocino and Sonoma Counties disappeared between 2014 and 2019. The scale, magnitude, and speed of this decline, and subsequent limited recovery even after the marine heatwave subsided, are unprecedented.

The loss of bull kelp has had significant impacts on ecological function and ecosystem services in northern California. Commercial red sea urchin landings in 2016 were 80% lower in this region than the 2006-2015 average, leading to a federal fishery disaster declaration for the northern California red sea urchin fishery in 2019. Populations of red abalone, California's only remaining abalone fishery, have declined so substantially that the \$44 million recreational red abalone fishery was closed by the California Fish and Game Commission in 2017 and will likely remain so until the population begins to recover. Kelp loss also poses a significant threat to the cultural lifeways of tribes on the north coast.

Given the ecological and socioeconomic importance of kelp, the severity of the crisis on the north coast, the potential vulnerability of giant kelp on the central and south coasts, and the reality that climate change will likely result in more frequent and more severe marine heatwaves, increased prevalence of marine disease, and other disruptions to kelp forest ecosystems in the future, the protection and restoration of these vulnerable places has emerged as a top priority for OPC and the California Department of Fish and Wildlife (CDFW). In recent years, OPC has invested more than \$3.5 million in pilot research and restoration projects to monitor kelp forest health, improve understanding of kelp loss and persistence, and test potential kelp restoration approaches. Additionally, in 2021, OPC released an [Interim Action Plan for Protecting and Restoring California's Kelp Forests](#)<sup>1</sup>, which outlines the state's top priorities for action in kelp research and monitoring, policy, restoration, and community engagement. The Action Plan highlights the development of proactive, climate-ready strategies for kelp management as an urgent need.

To address this need, CDFW, with support from OPC, is now seeking to develop a statewide, ecosystem-based Kelp Restoration and Management Plan (KRMP) for bull kelp and giant kelp. The KRMP will provide approaches for managing, protecting, and restoring kelp forests in the face of changing ocean conditions. Specifically, the KRMP will include three core components: 1) a harvest management framework and other fishery management plan elements required by the Marine Life Management Act, 2) an innovative framework for ecosystem-based management of kelp forests, and 3) a restoration “toolkit” consisting of kelp restoration options available to resource managers in California, as well as a summary of the ecological and socioeconomic conditions under which various options are likely to be most effective. The latter two components are entirely novel. To date, no state fishery management plan has attempted to incorporate these considerations, but such bold and innovative management strategies are essential for meeting the urgency of the climate crisis.

Staff recommends that OPC authorize investment to initiate the development of the KRMP, which will include two distinct but related initiatives: overall project

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[https://www.opc.ca.gov/webmaster/ftp/pdf/agenda\\_items/20210216/Item7\\_KelpActionPlan\\_ExhibitA\\_FINAL.pdf](https://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20210216/Item7_KelpActionPlan_ExhibitA_FINAL.pdf)

management and facilitation, which will be led by Strategic Earth Consulting, and integration of the best available science, which will be led by California Sea Grant.

*Project management and facilitation.* Strategic Earth will bring their considerable expertise, experience, and commitment to diversity, equity, and inclusion to bear on all aspects of KRMP project management and facilitation. Specifically, Strategic Earth will provide overarching strategic planning and administrative support to CDFW and OPC, based on top priority management, community engagement, and communications needs; facilitate meaningful and effective engagement with California Native American tribes in alignment with OPC's forthcoming Tribal Engagement Strategy; engage stakeholder communities – particularly fishermen, divers, and harvesters – through the convening of dedicated stakeholder working groups; support communications needs; and coordinate with California Sea Grant as appropriate.

*Integration of the best available science.* As the lead for California's [Kelp Recovery Research Program](#)<sup>2</sup>, California Sea Grant is well positioned to lead aspects of KRMP development related to science needs, and will work with CDFW, OPC, and Strategic Earth to ensure that the best available and most current science is directly integrated into the KRMP. Specifically, Sea Grant will convene, administer, and facilitate a Science Advisory Committee composed of experts in natural and social sciences, economics, and local and traditional knowledges; compile and synthesize biological and socioeconomic data from published works, gray literature, academic meetings, and other sources, including through the production of "state of the science" reports that highlight key knowledge gaps; and administer an independent, external peer review of the KRMP per guidance outlined in the Marine Life Management Act.

Kelp ecosystems are fundamental to California's marine biodiversity and its ocean economy. However, as our climate changes, kelp faces an uncertain future. The development of proactive, climate-ready strategies for kelp management through a science-informed, transparent, and inclusive KRMP process will ultimately help to protect our state's underwater forests and the communities that rely on them.

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[https://www.opc.ca.gov/webmaster/ftp/pdf/agenda\\_items/20200619/Item8\\_KelpRecoveryResearchProgram\\_FINAL.pdf](https://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20200619/Item8_KelpRecoveryResearchProgram_FINAL.pdf)

## About the Grantees

### Strategic Earth Consulting

Strategic Earth Consulting is a woman-owned small business dedicated to supporting diverse voices in natural resource management. Strategic Earth brings over two decades of experience developing and implementing communications and public engagement projects related to coastal and ocean issues, and their team has successfully managed several large and complex efforts on behalf of both OPC and CDFW, including other fishery management plan processes.

### California Sea Grant

California Sea Grant is a unique partnership that unites federal, state, and university resources across California to create knowledge, products, and services that benefit the economy, the environment, and the citizens of California. Sea Grant has an established, highly respected process for administering work related to science needs for coastal and ocean resource management. Sea Grant is experienced at convening and facilitating large groups, synthesizing complex scientific information, and administering peer review processes. Recently, Sea Grant and OPC collaborated on a competitive call (the Kelp Recovery Research Program) that awarded nearly \$2 million in funding for solutions-oriented kelp research and restoration projects.

## Project Timeline

- October 2022: funding awarded
- January – December 2023: convene Science Advisory Committee, conduct early consultations with tribes, convene stakeholder working groups, synthesize state of the science and identify critical knowledge gaps
- January – December 2024: continue scientific, tribal, and stakeholder engagement; initiate work to address critical knowledge gaps
- January – December 2025: continue scientific, tribal, and stakeholder engagement' begin drafting KRMP
- January – December 2026: finalize draft KRMP; administer peer review; begin early implementation of management actions
- December 2026: grant completion date; all grant deliverables due to OPC

## Project Financing:

Staff recommends that OPC authorize encumbrance of up to \$616,500 to Strategic Earth Consulting and up to \$597,552 to California Sea Grant as outlined above.

Ocean Protection Council	\$1,214,052
<b>TOTAL</b>	<b>\$1,214,052</b>

The anticipated source of funds will be OPC’s FY 2018/2019 appropriation of Proposition 68 funds (Chapter 9 – Ocean, Bay, and Coastal Protection). Per OPC’s Proposition 68 Grant Guidelines, this funding source prioritizes projects intended to conserve, protect, and restore marine wildlife and healthy ocean and coastal ecosystems.

## Consistency with California Ocean Protection Act:

The proposed project is consistent with the California Ocean Protection Act, Division 26.5 of the Public Resources Code, because it is consistent with trust-fund allowable projects, defined in Public Resources Code Section 35650(b)(2).

## Compliance with the California Environmental Quality Act (CEQA):

The proposed project is categorically exempt from review under the California Environmental Quality Act (“CEQA”) pursuant to 14 Cal. Code of Regulations Section 15306 because the project involves only data collection, research and resource evaluation activities that will not result in a serious or major disturbance to an environmental resource.