Staff Recommendation
April 24, 2023

Item 7

Action Item:
Consideration and Approval to Disburse Funds to Accelerate Kelp Research and Restoration Efforts

Michael Esgro, Senior Biodiversity Program Manager & Tribal Liaison

Recommended Action: Authorization to disburse up to $5,400,000 to California Sea Grant to support kelp research and restoration projects statewide, selected via a competitive call. Individual projects recommended for approval will be presented at the December 2023 Council meeting.

Location: Statewide

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

Equity and Environmental Justice Benefits: Mentorship to undergraduate and graduate students, with the goal of increasing diversity and retention in science, technology, engineering, and mathematics (STEM) fields; supporting research relationships with minority-serving institutions; supporting meaningful inclusion of stakeholder communities in research and restoration efforts, including through community science; supporting tribally-led research and restoration efforts; improved access to coastal and marine resources and ecosystem services.

Exhibits:

Exhibit A: Letters of Support

Findings and Resolution:

Staff recommends that the Ocean Protection Council (OPC) adopt the following findings:

"Based on the accompanying staff report and attached exhibit(s), OPC hereby finds that:

1. The proposed projects are consistent with the purposes of Division 26.5 of the Public Resources Code, the California Ocean Protection Act;
2. The proposed projects are consistent with the Budget Act of 2022 which included a $50 million General Fund appropriation for grants or expenditures for resilience projects that conserve, protect, and restore marine wildlife and healthy ocean and coastal ecosystems; and
3. The proposed projects are not 'legal projects' that trigger the California Environmental Quality Act (CEQA) pursuant to Public Resources Code section, section 15378."

Staff further recommends that OPC adopt the following resolution pursuant to Sections 35500 *et seq.* of the Public Resources Code:

"OPC hereby approves the disbursement of up to $5,400,000 to California Sea Grant to support kelp research and restoration projects statewide, selected via a competitive call, subject to the condition that individual projects recommended for approval will be presented to the Council at its December 2023 meeting for final concurrence on grant awards.

This authorization is subject to the condition that prior to disbursement of funds, California Sea Grant shall submit for the review and approval of the Executive Director of the OPC 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:

Staff recommends that OPC authorize disbursement of up to $5,400,000 to California Sea Grant to support kelp research and restoration projects statewide, selected via a competitive call. Individual projects recommended for approval will be presented at the December 2023 Council meeting.

Kelp forests are fundamental to California's marine biodiversity and its ocean economy. However, kelp is also under threat as ocean conditions change. California's north coast experienced devastating kelp loss following a recent marine heat wave; some areas on California's central and south coasts are experiencing significant kelp declines as well. Given the ecological, socioeconomic, and cultural importance of kelp, as well as its vulnerability to climate change, OPC and the California Department of Fish and Wildlife (CDFW) are prioritizing the protection and restoration of California's kelp forests to conserve biodiversity, build climate resilience, and maintain ecosystem services.

In 2021, OPC released a Kelp Action Plan containing strategies and opportunities to address the kelp crisis proactively, and OPC has invested more than $3.5 million to date in monitoring kelp forest health, improving understanding of kelp loss and persistence, and testing potential kelp restoration approaches. This has included partnership with CDFW and California Sea Grant to launch a statewide, solutions-oriented Kelp Recovery Research Program. This groundbreaking effort, which will conclude in May 2023, has resulted in the development of science-based guidance for optimizing kelp restoration location and timing, improved understanding of the efficacy of various restoration approaches, the creation of a bull kelp seed bank, and the development of dynamic social-ecological models to help identify the most effective tools for management action. The Kelp Recovery Research Program has proven invaluable in filling knowledge gaps, but as described in OPC's Kelp Action Plan, significant scientific, policy, and management questions remain.

To address remaining research needs, support action while a statewide Kelp Restoration and Management Plan is being developed by CDFW, and promote a "learn by doing" approach to kelp conservation, this project will build upon the successes of the Kelp Recovery Research Program to accelerate and scale up kelp research and restoration in California through a competitive solicitation administered by California Sea Grant.

Project Summary:

Background:

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 provides habitat and serves as an important food source for marine organisms. Kelp can also provide important climate resilience benefits and 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.

Although kelp abundance naturally fluctuates from year to year, 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, including an explosion in kelp-eating purple sea urchin populations, more than 95% of the bull kelp in northern California was lost between 2014 and 2019, with significant negative impacts on ecological function and ecosystem services across the region. In central and southern California, kelp loss has been patchier and less widespread, but some areas such as the Monterey Peninsula are showing concerning declines.

Given the ecological, socioeconomic, and cultural importance of kelp, as well as its vulnerability to climate change, OPC and CDFW are prioritizing the protection and restoration of California's kelp forests to conserve biodiversity, build climate resilience, and maintain ecosystem services. In 2021, OPC released a Kelp Action Plan containing strategies and opportunities to address the kelp crisis proactively, and OPC has invested more than $3.5 million to date in monitoring kelp forest health, improving understanding of kelp loss and persistence, and testing potential kelp restoration approaches. The Kelp Action Plan is slated to be updated this year to incorporate findings of pilot research and restoration projects. In the longer term, with support from OPC, CDFW is working to develop a statewide, ecosystem-based Kelp Restoration and Management Plan (KRMP), to be completed in 2027. Ultimately, the KRMP will provide state resource managers with a science-based framework for managing, protecting, and restoring kelp forests in the face of changing ocean conditions.

One critical component of pilot research and restoration work has been the launch of a statewide Kelp Recovery Research Program in partnership with CDFW and California Sea Grant. Through an investment of $600,000 from OPC and $1,200,000 from California Sea Grant, the state has supported and participated in a suite of six solutions-oriented kelp research projects, selected through a competitive call. This groundbreaking program, which will conclude in May 2023, has resulted in the development of science-based guidance for optimizing restoration location and timing; improved understanding of the efficacy of various restoration approaches, including kelp enhancement; the creation of a bull kelp seed bank; and the development of dynamic social-ecological models to help identify the most effective tools for management action. This work has proven invaluable in filling knowledge gaps, but as described in the Kelp Action Plan, significant scientific, policy, and management questions remain.

Project Summary:

To address remaining research needs, support action while the KRMP is being developed, and promote a "learn by doing" approach to kelp conservation, this project will build upon the successes of the Kelp Recovery Research Program to accelerate and scale up kelp research and restoration in California. The program aims to support between 3-8 individual solutions-oriented projects, with a maximum project amount of $2,000,000, through a competitive call; applicants will be required to clearly demonstrate how proposed work will support the development of solutions to the kelp crisis and inform kelp management.

Specifically, this project will accomplish the following objectives:

- *Select projects via a competitive process.* California Sea Grant will administer the research proposal and application process. Proposals will undergo a structured and competitive

review process led by California Sea Grant, which will include technical review of all proposals by an external panel of scientific experts. OPC and CDFW staff will be involved in all stages of the review process, including both technical review and final decision-making.

- *Manage research projects.* California Sea Grant will administer research awards, support virtual and in-person convenings of Principal Investigators and state resource managers, and conduct public-facing outreach and communication about project findings to a variety of audiences. Types of projects anticipated to be funded through this solicitation may include, but are not limited to:
    - Kelp restoration projects informed by best available science developed through the Kelp Recovery Research Program (e.g. selecting sites where restoration is likely to be most effective, using restoration methods with demonstrated efficacy)
    - Further scientific investigation of the benefits and potential risks of emerging kelp restoration methods
    - Work that supports the development of ecosystem-based management strategies for kelp
    - Modeling that helps resource managers reliably forecast patterns of kelp abundance and distribution as ocean conditions change
    - Tribally-led research and restoration projects, including work that promotes the elevation of Indigenous Traditional Knowledges in kelp management

Individual projects selected through this program will be brought to the Council for approval, in concert with an updated Kelp Action Plan, in December 2023. Following Council concurrence, the anticipated start date of approved projects is February 1, 2024.

Equity and Environmental Justice Benefits:

OPC is committed to ensuring that all Californians benefit from the work that it supports. For this competitive call, OPC and California Sea Grant will encourage all applicants to meaningfully integrate justice, equity, diversity, and inclusion into project design, and will prioritize work that broadens participation of underrepresented groups in science and conservation. In particular, research proposals that provide guided research experiences and mentorship to students, with the goal of increasing diversity and retention in science, technology, engineering, and mathematics (STEM) and launching careers in coastal science, and supporting research programs within or building research relationships with Minority Serving Institutions (MSIs), will be highly encouraged.

For both research and restoration projects, partnerships with California Native American tribes, local community-based organizations, community science groups, and impacted stakeholders such as recreational divers and commercial fishermen, will be highly encouraged. This is consistent with OPC's Equity Plan Goal 1.4: "Ensure OPC projects and actions are informed by community needs by

incorporating community engagement into every OPC project and funding opportunity, as appropriate" and Goal 4.2: "Collaborate with California Native American tribes, environmental justice communities, and community partners such as: community-based organizations, colleges and universities, research organizations, including community science groups, and local stakeholders, to include Traditional Ecological Knowledges, tribal expertise, local knowledge, social science, historical context, and lived experiences into ocean and coastal science, and research," as well as OPC's Tribal Engagement Strategy Section IV(6): "Work with tribes, academics, and other partners to develop and implement a trusted pathway for the consideration of tribal expertise and Traditional Ecological Knowledges (TEK) in ocean and coastal management decisions" and Section IV(10): "co-develop research, monitoring, and restoration projects [with tribes]."

About the Grantee:

California Sea Grant is a unique partnership that unites the resources of the federal government, state government, and universities across California to create knowledge, products, and services that benefit the economy, the environment, and the citizens of California. California Sea Grant has an established, highly respected process for evaluating, prioritizing, and administering research grants related to coastal and ocean resources, and has a proven track record of supporting state research efforts. California Sea Grant is experienced at managing large contracts and grants, is familiar with the state's scientific community, and has successfully managed many other solicitation and award efforts on behalf of OPC.

From 2020-2023, California Sea Grant successfully administered the statewide Kelp Recovery Research Program, a suite of six solutions-oriented research projects aimed at protecting and restoring kelp ecosystems statewide. This included development of a request for proposals, evaluation of proposals, and effective management of selected research projects.

The planned solicitation will meet California Sea Grant's 2024-2027 Strategic Plan goals related to building and maintaining 1) Healthy Coastal Ecosystems, 2) Sustainable Fisheries and Aquaculture, and 3) Resilient Coastal Communities and Economies.

Project Timeline:

- April 2023: OPC concurrence on partnership with California Sea Grant and disbursement of funds
- July 2023: RFP release
- August-November 2023: Project review and selection
- December 2023: OPC concurrence on individual projects recommended for funding
- February 2024: Work begins on individual projects

Project Financing:

Staff recommends that the Ocean Protection Council (OPC) authorize encumbrance of up to $5,400,000 to California Sea Grant to support solutions-oriented kelp research and restoration projects statewide.

California Ocean Protection Council	$5,400,000
TOTAL	$5,400,000

The anticipated source of funds will be from the Budget Act of 2022, which included a $50 million General Fund appropriation to OPC for grants or expenditures for resilience projects that conserve, protect, and restore marine wildlife and healthy ocean and coastal ecosystems, as well as OPC's Fiscal Year 2018/2019 appropriation of California Environmental License Plate Funds. The proposed disbursement and anticipated projects are an appropriate use of these funding sources because the projects will directly support efforts to restore and protect marine ecosystems in the face of changing conditions.

Consistency with California Ocean Protection Act:

The proposed project is consistent with the 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) as projects which:

- Eliminate or reduce threats to coastal and ocean ecosystems, habitats, and species.
- Improve the management of fisheries and/or foster sustainable fisheries.
- Allow for increased public access to, and enjoyment of, ocean and coastal resources, consistent with sustainable, long-term protection and conservation of those resources.
- Improve management, conservation, and protection of coastal waters and ocean ecosystems.
- Provide monitoring and scientific data to improve state efforts to protect and conserve ocean resources.
- Protect, conserve, and restore coastal waters and ocean ecosystems.
- Provide funding for adaptive management, planning coordination, monitoring, research, and other necessary activities to minimize the adverse impacts of climate change on California's ocean ecosystem.

Compliance with the California Environmental Quality Act (CEQA):

The proposed project is not a 'legal project' that triggers the California Environmental Quality Act (CEQA) pursuant to Public Resources Code section 21068 and Title 14 of the California Code of Regulations, section 15378.

If individual projects are selected through this program that trigger CEQA, OPC must determine whether the project is in compliance with CEQA prior to the issuance of funding awards.