



2024-2027
**STRATEGIC
PLAN**

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[Page 1] Drew M. Talley (Location: Tijuana River National Estuarine Research Reserve)

[Page 2] Clockwise from top left: Drew M. Talley, Theresa S. Talley, Headway LLC, Theresa S. Talley

[Page 4] iStock.com/Melpomenem (Location: Bair Island Marine Park, Redwood City, CA)

[Page 7] Top: Ocean Discovery Institute (Location: Tijuana River National Estuarine Research Reserve); Bottom: Theresa S. Talley (Location: Bonita Cove, Mission Bay, CA)

CALIFORNIA'S CONNECTION TO COASTAL & MARINE ENVIRONMENTS

California's sheer size and coastal diversity present unique opportunities and challenges. The state's 840-mile length includes 3,425 miles of meandering coastline that winds through four distinct coastal bioregions[1] including the more forested coasts in the north and the highly urbanized arid coastline of the south. The state is home to 11 major seaports, more than 700 active marinas and hosts a mix of culturally and economically diverse fishing communities that engage in the harvest of marine resources for commercial, recreational, subsistence and ceremonial purposes. Along with its 39 million residents, California's iconic coastline lures nearly 214 million visitors a year with many looking towards the water to surf, swim, fish, boat and recreate. If California were a nation, it would rank as the world's fifth-largest economy[2].

While it can be hard to fully grasp the breadth and diversity of California's coastal ecosystems and communities, what's easy to recognize is the near-constant level of human activity in the state's coastal zones. This activity has created a pressing and ongoing need for science-based information and novel approaches to resource management. Through research and extension efforts in our five focus areas — Sustainable Fisheries and Aquaculture; Healthy Coastal Ecosystems; Resilient Communities and Economies; Environmental Literacy and Workforce Development; and Diversity, Equity, Inclusion, Justice and Accessibility — California Sea Grant is working towards addressing these challenges and striving to create sustainable, equitable solutions that support California's extraordinary ecosystems and communities.

[1] USGS. Bioregions of the Pacific. <https://www.usgs.gov/centers/werc/science/bioregions-pacific-us>
[2] Statistics times. 2019. <https://statisticstimes.com/economy/world-gdp-ranking.php>



CALIFORNIA SEA GRANT OVERVIEW

Administered by the National Oceanic Atmospheric Administration (NOAA), Sea Grant is a national network of 34 university-based programs in each of the U.S. coastal and Great Lakes states, Puerto Rico and Guam. For over 50 years, California Sea Grant has delivered science, increased ocean literacy and engaged thousands of communities to ensure that they can enjoy and depend on California's coastal resources, through research, education, extension and communications.

Through California Sea Grant's extension activities, communities provide input to collaboratively identify research needs and priorities. Research programs have provided timely and topic-relevant information for pressing management questions. Hundreds of coastal careers have been fostered through California Sea Grant's 20 years of fellowships. Training and technical assistance provided by California Sea Grant has supported many across the state in the use

of innovative resource management solutions to address stressors such as pollution and climate change.

Looking forward, California's coastal ecosystems and communities are expected to face even greater challenges. California Sea Grant can play an important role in helping to address these challenges through continued investments in research, diverse engagement, workforce development and education to build expertise and nurture sustainable and equitable solutions.

Foundational to these efforts are cross-sector partnerships with federal and state agencies, California tribal nations, non-governmental organizations (NGOs), businesses, universities and community organizations. With each of these relationships, California Sea Grant will continue to establish priorities, include diverse voices, collaborate on projects of mutual interest and ensure that knowledge is generated and used effectively.

WHAT WE DO



RESEARCH GRANTS & FUNDING

California Sea Grant facilitates scientific discoveries and the generation of new knowledge in response to key questions about California's ocean, coasts and watersheds through competitively selected extramural research that has been reviewed for scientific merit and potential impact.



EXTENSION

California Sea Grant engages and builds relationships with coastal communities, key partners and community members to jointly identify and address pressing needs and new opportunities through applied research, technical assistance and outreach. The knowledge is then collaboratively applied to address the issues – this process of collaborative discovery, co-design and problem-solving is at the heart of Sea Grant's operational model.



EDUCATION

California Sea Grant transmits knowledge and skills through a variety of formal and informal training mechanisms, including fellowships, internships, traineeships and apprenticeships surrounding policy, research, extension, communication and industry practice – all aimed at contributing to life-long learning, informed decision-making and leadership surrounding the use and conservation of California's coastal and marine resources.



COMMUNICATIONS

California Sea Grant generated information is shared with targeted audiences through a variety of media to create awareness and engagement that complements the research, education and extension activities.

VISION

California Sea Grant envisions a future of resilient, thriving coastal and marine environments and ecosystems that are valued by and support the well-being of California communities.

MISSION

California Sea Grant's mission is to provide the information, tools, training and relationships needed to help California conserve and sustainably prosper from our coastal and marine environments.

CORE VALUES

In our work towards fulfilling our mission and vision, California Sea Grant will instill core values across its work in all areas, including:

INCLUSION

We are committed to fostering a welcoming environment in which everyone feels respected, valued, supported and has a sense of belonging. In addition, we aim to provide equitable access to information, opportunities and benefits that are inclusive of diverse perspectives.

ENGAGEMENT

We inspire positive change through active listening, building trust, culturally sensitive and accessible communication and instilling a sense of excitement, responsibility and empowerment to make a difference.

INTEGRITY

We value the power of evidence-based information for generating discoveries and instilling a sense of wonder, training tomorrow's environmental leaders, nurturing environmentally responsible citizens and objectively informing decisions and guiding actions that conserve marine resources and coastal communities.

COLLABORATION

We follow a shared path of discovery, production, ownership and benefit that is fueled by a dedication to partnerships, listening and progressing together, supporting and recognizing each other's strengths and working together to maximize efficiency and impacts.

SUSTAINABILITY

We strive to promote a balance between the responsible use and conservation of coastal and marine resources to maximize the well-being of California now and for generations to come.



FOCUS AREAS

California Sea Grant can strategically address key issues related to marine and coastal sustainability and resilience through work within and across defined Focus Areas. Focus Areas consist of both cross-cutting and topical themes. Cross-cutting Focus Areas include themes like diversity, environmental literacy and education (e.g., DEIJA, ELWD) that are foundational to all of California Sea Grant's work and applicable across each of the themes represented in the Topical Focus Areas.

Topical Focus Areas provide thematic groupings to the wide array of Sea Grant's activities to address and respond to urgent ocean and coastal needs. They are generally delineated by the types of pressures and the supporting, regulating and cultural services provided by

Healthy Coastal Ecosystems (HCE) and the provisioning services those ecosystems provide – Resilient Communities and Economies (RCE) and Sustainable Fisheries and Aquaculture (SFA). Additionally, as one of the state programs in the national Sea Grant Network, California Sea Grant's Topical Focus Areas align with those set by the National Sea Grant College Program as a way to organize and report our accomplishments, impacts and outcomes.

In practice, Focus Areas are highly interrelated and a single activity may advance the goals of several at once. Focus Areas are executed through California Sea Grant's four main functions: research grants and funding, education, communication and extension, which includes applied research and community engagement.

FOCUS AREAS: CROSS-CUTTING

ENVIRONMENTAL LITERACY AND WORKFORCE DEVELOPMENT (ELWD)

The future health and resiliency of California's coastline will depend on the strength of knowledge of its varied communities.

It's here that California Sea Grant is well-positioned to play a leading role. Through mentorship by California Sea Grant-supported researchers, fellowship experiences with state agencies and outreach activities by extension staff, California Sea Grant empowers communities with access to the best science and technology to make more informed decisions and policies.

California Sea Grant fosters environmental literacy and environmentally-responsible community members by providing accessible, public-facing information for audiences of all ages and backgrounds and by serving as experts bringing science to people. Researchers are encouraged to include education and outreach into their California Sea Grant-funded research to engage communities in science. To reach a wider audience publicly funded research is shared (as required by federal legislation) through local news outlets, speaking opportunities and public events — all of which can notably improve environmental literacy among the state's diverse communities.

In collaboration with agency partners, industry and other academic partners, California Sea Grant contributes to an informed, skilled workforce by preparing Californians for the challenges ahead through continued learning and problem-solving. Through fellowships, internships and other programs, a diverse cohort of undergraduate through post-graduate students can gain critical knowledge and hands-on experience in marine science research, management, policy, extension and communication. Other programs such as apprenticeships provide anyone in the state with an opportunity to learn industry skills and competencies while developing industry connections through interactive trainings and on-the-job work experiences. An inclusive and equitable pipeline of well-trained, diverse future professionals generating, sharing and applying a steady stream of science-based knowledge will lead to effective and fair future policies and a more engaged and informed citizenry.

ELWD GOAL 1

A diverse, environmentally literate California — from local communities to formal decision-makers — has access to the best available information to engage in informed personal choices, participatory decision-making and community-planning processes enabling adaptation and mitigation to changing conditions.

OUTCOMES

- 1 A variety of approaches provide information and knowledge that can be used to act on issues that impact lives, communities and environments.
- 2 Decision-makers apply this knowledge to remove barriers and bolster personal and social resilience and adaptation to changing economic, environmental and social conditions.

ELWD GOAL 2

A diverse, skilled and environmentally literate workforce that is prepared to build prosperous livelihoods in a changing world while addressing critical local, regional and national needs through traditional and innovative careers.

OUTCOMES

- 1 California Sea Grant fellowship and funding opportunities provide increased literacy, experience and preparedness in critical disciplines, skills and issues important to California's coastal and marine ecosystems and human communities.
- 2 Students and early career professionals from diverse backgrounds and with diverse needs are thoroughly supported and have access to formal and experiential learning, training, research experiences and career opportunities.

FOCUS AREAS: CROSS-CUTTING

DIVERSITY, EQUITY, INCLUSION, JUSTICE AND ACCESSIBILITY (DEIJA)

Mirroring our diverse coastal ecosystems, California is the most populous and second-most racially and ethnically diverse state in the United States. This combination presents an incredible opportunity to ensure our program's staff, funding opportunities and extension programming are accessible and address the priorities of the diversity of communities and individuals who engage with marine and coastal ecosystems.

However, marine sciences historically and currently lack demographic diversity resulting from significant systemic barriers to access and a missing sense of belonging by underrepresented groups in this field. California Sea Grant acknowledges that we can do better and have a unique opportunity to learn from and partner with the diversity of communities we serve. This includes testing new approaches to reduce systemic barriers and sharing best practices with the broader coastal and marine sciences workforce. The only way to effect positive change and achieve our mission is to be committed to advancing diversity, equity, inclusion, justice and accessibility (DEIJA) throughout our program and network (i.e., staff, advisors, reviewers, panelists, awardees and community partners).

In alignment with the Sea Grant DEIJA Vision and Roadmap, California Sea Grant aims to create a more diverse, equitable and inclusive organization and the marine sciences field as a whole. Our DEIJA Goals are designed to 1) empower our staff with the knowledge and skills needed to effectively serve a diversity of communities, 2) proactively recruit, retain and advance a diverse California coastal and marine sciences workforce by reducing barriers to accessing Sea Grant opportunities and 3) increase co-production and partnership between extension and communication staff with a diversity of communities, particularly Indigenous, underserved and underrepresented peoples.

DEIJA GOAL 1

California Sea Grant staff have the capacity, financial support, skills and partnerships to implement diversity, equity, inclusion, justice and accessibility principles in their work throughout all aspects of the organization.

OUTCOMES

- 1 California Sea Grant, in collaboration with the Sea Grant Network and the broader coastal and marine sciences profession, maintains a reflective mindset through iterative learning and assessment of DEIJA practices.
- 2 California Sea Grant staff utilize existing best practices and develop new strategies that advance DEIJA within our program and network of community partners.
- 3 California Sea Grant educators and fellowship administrators have strong relationships and partnerships with organizations serving a diversity of communities, focused on Indigenous, underserved and underrepresented organizations such as Minority Serving Institutions, Hispanic Serving Institutions, Tribal Colleges and Universities, Asian American and Pacific Islander Serving Institutions, community colleges, community-based organizations and other organizations focused on training the next generation of marine and coastal science professionals.

FOCUS AREAS: CROSS-CUTTING DIVERSITY, EQUITY, INCLUSION, JUSTICE AND ACCESSIBILITY (DEIJA)

UNDERSERVED COMMUNITY - a community that has been or is currently systematically excluded from research and/or policymaking processes, and/or facing inequity

UNDERREPRESENTED GROUPS - refers to those that have lower representation in marine and coastal sciences than their representation in California’s population, including Blacks, Latine, nonbinary gender identities, and persons with disabilities

INDIGENOUS PEOPLES - Refers to First Nations, American Indian and Aboriginal peoples including from federally-recognized Tribes

DEIJA GOAL 2

Across our staff and network, California Sea Grant builds a program where a diversity of lived experiences are represented, particularly Indigenous, underserved and underrepresented identities in marine and coastal sciences, thereby facilitating a culture of belonging and equitable support.

OUTCOMES

- 1 Improved representation of individuals from a diversity of communities, focused on Indigenous, underserved and underrepresented peoples among California Sea Grant staff and network.
- 2 Funding opportunities are developed through participatory processes and support engaged research and training with a diversity of communities, focused on Indigenous, underserved and underrepresented groups.



DEIJA GOAL 3

California Sea Grant and its network co-produce knowledge, create access to scientific information and support research and scholarship priorities of value to a diversity of communities, focused on Indigenous, underserved and underrepresented peoples.

OUTCOMES

- 1 California Sea Grant extension staff build coalitions with and engage a diversity of communities in co-producing knowledge that incorporates socioeconomics, history and culture as well as traditional, local and Indigenous knowledge.
- 2 A diversity of partners and communities have access to and are empowered to apply relevant scientific information in the co-creation of resources and products addressing priority marine and coastal resource issues for Indigenous, underrepresented and underserved communities.



FOCUS AREAS: TOPICAL

SUSTAINABLE FISHERIES & AQUACULTURE (SFA)

From misty Oregon to the arid U.S.-Mexico border, California's 840-mile coastline is home to the largest ocean-based economy in the U.S. Here fishing has long played a key role in supplying healthy food, skilled jobs and other important economic and cultural benefits.

An expanding aquaculture industry looking to create a steady supply of shellfish, seaweeds and finfish is now poised for growth, bringing with it skilled jobs and other benefits.

The diverse bounty of seafood sustainably landed on the state's coast, including tuna, Dungeness crab, Chinook salmon, rockfish, Pacific mackerel, market squid and Pacific oyster, provide an important source of highly nutritious protein for many of the state's 39 million residents and helps sustain California's commercial and recreational seafood industries. But significant challenges threaten these industries, including climate change, ocean acidification and hypoxia, harmful algal blooms, financial and regulatory barriers to starting or expanding business ventures, supply chain disruptions and pressure from coastal and offshore development.

These challenges reinforce the vital role California Sea Grant plays in nurturing robust California fisheries, supporting the state's aquaculture industry and creating productive, compatible relationships between the two and other ocean users. By collecting and sharing important data and filling in information gaps, California Sea Grant helps fishers and growers make important decisions on how to adapt to the rapid changes they're often already experiencing. Through research, extension and education, California Sea Grant is poised to provide science-backed information to promote public and private decision-making in an effort to ensure that a sustainable supply of seafood will be available long into the future. With this challenge in mind, California Sea Grant has identified the following goals for this focus area.

SFA GOAL 1

California's fisheries, aquaculture, seafood systems and the environments that support them are environmentally, economically and socially more sustainable and resilient to future change through the facilitation of partnerships and the (co-) production of knowledge.

OUTCOMES

- 1 Newly developed or synthesized information improves the industry's understanding of how to reliably produce and provide sustainable and safe seafood and other products in a changing environment.
- 2 Partners and communities that reflect the diversity of people with interests in fishing, aquaculture and seafood are engaged to identify, inform and implement priorities surrounding knowledge generation.

SFA GOAL 2

California's fishing, aquaculture and seafood industries have evidence-based information, partnerships and tools needed to support decision-making and a sustainable path forward through community engagement, collaboration and education.

OUTCOMES

- 1 Evidence-based information on sustainable fisheries, aquaculture and seafood, including natural/social sciences and traditional, local and Indigenous knowledge, is collaboratively translated, communicated and made equitably accessible to people with interests in the state's fisheries and aquaculture operations.
- 2 New and strengthened partnerships work collaboratively using evidence-based information to develop approaches and tools that allow us to better balance our reliance on and conservation of ecosystems and communities that produce seafood.

FOCUS AREAS: TOPICAL

SUSTAINABLE FISHERIES & AQUACULTURE (SFA)

SFA KEY TOPICS

Attaining sustainable and resilient seafood systems in California requires priorities that will enhance both wild-capture fisheries and aquaculture in complementary and collaborative ways. This can be achieved by exploring new fisheries and aquaculture products and enhancing existing ones, to ensure that safe, high-quality seafood from both farmed and wild sources remains available to consumers. While specific priorities may vary, sub-topics range from basic biology to techniques and technology (Table 1).

Table 1. Key SFA topics of priority in California from 2024-2027 include identifying the causes and effects of stressors; and identifying challenges and developing solutions related to sustainable fisheries, aquaculture, and the people and ecosystems that support them.

SFA KEY TOPIC	EXAMPLES OF SUB-TOPICS THAT INTERACT WITH SUSTAINABLE FISHERIES, AQUACULTURE & SEAFOOD
Enhancing emerging and existing fisheries and aquaculture ventures	<ul style="list-style-type: none"> ■ Feasibility of emerging species for harvest and production ■ Basic economic, social and natural scientific information ■ Effects of stressors on species of interest ■ Facilitating permitting of new and expanding ventures
Innovative approaches and applications in fisheries and aquaculture	<ul style="list-style-type: none"> ■ Conservation and restorative aquaculture ■ New technologies and modeling approaches for fisheries management ■ Techniques to adapt fisheries and aquaculture to a changing environment ■ Ecosystem services and impacts of aquaculture and fisheries
Resilient and safe seafood systems	<ul style="list-style-type: none"> ■ Seafood availability and accessibility ■ Seafood quality, safety and supply chain transparency ■ Fishing and aquaculture infrastructure and resources ■ Producer to public connections and education

HEALTHY COASTAL ECOSYSTEMS (HCE)

California is home to some of the most diverse and productive ecosystems in the world, many of which are located along the 3,425 miles of coastline that meanders along the rugged open coast and around bays, and in the adjacent ocean.

From its rich wetlands, coastal streams and estuaries, to lush kelp forests to the unlit depths of iconic submarine canyons, California's habitats teem with life. But these habitats face challenges from multiple stressors, including nutrient and pollutant discharge, harmful algal blooms, species invasions and more. In addition, climate change stressors like changing precipitation patterns and related phenomena, including ocean acidification and hypoxia, have emerged as major threats to California communities and ecosystems.

Keeping California's coastal ecosystems healthy is critical not just for nature but for the human communities and industries – including recreation and fishing – that depend on these ecosystems for their ecological, intrinsic, aesthetic and economic value. California Sea Grant is committed to improving our understanding of the dynamic processes that influence ecosystem productivity, biodiversity and vulnerabilities and ensuring that resulting discoveries and knowledge are made accessible, including via meaningful and understandable messaging and open access platforms, to people who will apply them for the conservation and responsible use of our ecosystems.

HCE GOAL 1

California's coastal and marine ecosystems, including the biodiversity, functioning and services they provide, are better understood, protected, enhanced and restored through the facilitation of partnerships and the (co-) production of knowledge.

OUTCOMES

- 1 Newly developed or synthesized information improves our understanding of natural and anthropogenic influences on coastal and marine ecosystems, including resources and services, in a changing environment.
- 2 Partners and communities that reflect the diversity of people with interests in coastal and marine ecosystems are engaged to identify, inform and implement priorities surrounding knowledge generation.

HCE GOAL 2

The people of California have evidence-based information, partnerships and tools to support and participate in decision-making that helps strengthen sustainable relationships with coastal and marine environments through community engagement, collaboration and education.

OUTCOMES

- 1 Evidence-based information, including natural/ social sciences and traditional, local and Indigenous knowledge on coastal and marine ecosystem dynamics is collaboratively and appropriately translated, communicated and made equitably accessible to a diversity of people.
- 2 New and strengthened partnerships work collaboratively to apply evidence-based information to the development of new and enhanced approaches and tools to better balance our reliance on and conservation of ecosystems.

FOCUS AREAS: TOPICAL

HEALTHY COASTAL ECOSYSTEMS (HCE)

HCE KEY TOPICS

Attaining healthy coastal ecosystems in California requires priorities that will improve our understanding of ecosystem functions and stressors, such as contaminants and climate change effects, and the development or refinement of innovative approaches, such as integrated management. While specific priorities may vary with biodiversity emergencies in California (e.g., harmful algal blooms or wildfires), anticipated priorities range from contaminants and carbon storage to pathogens and pollution (Table 2).

Table 2. Key HCE topics of priority in California from 2024-2027 include identifying the causes or effects of stressors as well as identifying challenges and developing solutions related to the watershed, coastal or marine ecological systems and the services they provide, in particular supporting and regulating services.¹

HCE KEY TOPIC	EXAMPLES OF SUB-TOPICS THAT INTERACT WITH ECOSYSTEMS AND THE SUPPORTING AND REGULATING SERVICES THAT THEY PROVIDE
Pollution in water, sediment and organisms	<ul style="list-style-type: none"> ■ Marine debris, land-based sources of trash ■ Microplastics ■ Chemical contaminants (DDT+, pesticides, etc) ■ Biological contaminants (disease, pathogens) & harmful algal blooms (HABS)
Multiple stressors	<ul style="list-style-type: none"> ■ Fire, drought, shifting freshwater flow regimes ■ Ocean acidification & hypoxia ■ Any combination of these and other stressors (e.g., pollution, invasive species, resource use)
Ecosystem processes & functions	<ul style="list-style-type: none"> ■ Landscape connectivity (watershed to ocean, terrestrial to aquatic) ■ Biodiversity and productivity ■ Carbon storage, nutrient and water cycling ■ Species of special interest including imperiled (e.g., coho), foundation (e.g., kelp), keystone, indicator and/or introduced species
Integrated management of oceans, coasts and watersheds	<ul style="list-style-type: none"> ■ Ocean observing (e.g., CalCOFI) and time-series studies in support of marine and adaptive management ■ Coastal and marine protection policies (e.g., MPAs, Pathways to 30X30) ■ Ecosystem creation, restoration or enhancement
Blue technology & innovative approaches	<ul style="list-style-type: none"> ■ Development and application of technologies that facilitate data collection, analysis, serving and communication of data (e.g., AI, eDNA, remote sensing, imaging and processing) ■ Novel solutions to improving observing/data collections or addressing common stressors

¹ FAO_Ecosystem Services and Biodiversity

RESILIENT COMMUNITIES AND ECONOMIES (RCE)

People throughout California, both rural and urban, are intimately linked to the health and sustainability of the state's coastal and marine resources.

How we respond to increasing threats from climate change and other stressors will shape the health and welfare of the coast and the people and economies that depend on it. California Sea Grant is committed to helping coastal communities increase their natural and socioeconomic resilience by supporting sea level rise/coastal hazards science and planning; exploring new ways to balance economic and natural resource sustainability; and addressing harmful activities and pollutants. Equitable access to knowledge and the opportunity to engage in solutions are emphasized to foster inclusive and sustainable coastal communities.

RCE GOAL 1

California coastal communities are better prepared for extreme and chronic weather and coastal hazards, climate change, economic disruptions and other threats to community health and well-being with support from science partnerships and the (co-) production of knowledge.

OUTCOMES

- 1 Newly developed or synthesized information improves our understanding of the impacts and vulnerabilities of communities to coastal hazards and coastal change.
- 2 Newly developed, (co-) produced or synthesized information that improves our understanding of how to protect, transition and adapt coastal and marine resources to enable equitable and sustainable resource use and access in a changing environment.
- 3 Priorities for knowledge generation and technical support needed for coastal resilience are collaboratively identified, informed and implemented by partners and communities that reflect the cultural and economic diversity of people in California.

RCE GOAL 2

California's coastal communities have the information, partnerships and tools needed to support planning, policy and actions for emerging marine and coastal industries and resource management that ensure an equitable and resilient path forward.

OUTCOMES

- 1 Evidence-based information, including natural/ social sciences and traditional, local and Indigenous knowledge is translated, communicated and made equitably accessible to a diversity of people with interests in supporting a balanced and sustainable legacy for coastal communities and economies.
- 2 Meaningful community engagement, collaboration and education are supported to inform and evaluate new approaches and uses of our ecosystems and benefits to our communities.

FOCUS AREAS: TOPICAL

RESILIENT COMMUNITIES AND ECONOMIES (RCE)

RCE KEY TOPICS

Priorities for attaining resilient communities and economies in California include improving knowledge and experience with preparing for coastal hazards and climate change and implementing nature-based solutions as well as finding a balance between the various ocean and coastal uses (Table 3).

Table 3. Key RCE topics of priority in California from 2024-2027 include the causes or effects of stressors and identifying challenges and developing solutions related to California’s communities and economies.

RCE KEY TOPIC	EXAMPLES OF SUBTOPICS THAT INTERACT WITH COMMUNITIES AND ECONOMIES
Understanding coastal hazards and risks	<ul style="list-style-type: none"> ■ Projections of sea level rise and extreme weather events ■ Coastal erosion, flooding and inundation impacts and trends ■ Water quality hazards (e.g., contamination, sedimentation, saltwater intrusion) ■ Increasing compound risks to coastal habitats, communities and economies
Coastal adaptation, hazard mitigation and resilience approaches	<ul style="list-style-type: none"> ■ Coastal and watershed adaptation and resilience science, strategies and assessments ■ Nature-based solutions (e.g., green/natural infrastructure, hybrid infrastructure, blue carbon restoration/mitigation) ■ Socioeconomic and cultural connections to risks, adaptive capacity and adaptation pathways ■ Equity-based adaptation strategies that draw from diverse knowledges and meet the needs of Native American tribes, disadvantaged and frontline communities. ■ Habitat protection, migration and transition approaches for sustaining ecosystem functions and services
Balancing coastal and ocean uses, sustainability and conservation	<ul style="list-style-type: none"> ■ Emerging ocean and coastal uses (e.g., offshore/marine renewable energy, marine technologies); sustainable futures for historic and current coastal uses (e.g., working waterfronts, coastal tourism and recreation, cultural heritage sites) ■ Coastal access, livelihood, health and environmental justice inequities

STRATEGIC PLANNING PROCESS

Early in 2022, California Sea Grant embarked on an inclusive, iterative strategic planning process to develop an updated strategic plan for 2024-2027. The process commenced by developing a strategic planning team which was iteratively assessed throughout in order to bring in new people to share expertise and best practices. The process consisted of three main phases (Figure 1) that occurred throughout 2022. These were 1) a Framework Phase to develop the mission, vision, core values, focus and functional areas; 2) a Goals Phase to develop the goals, outcomes and performance measures and metrics associated with each Focus Area; followed

by 3) the Review Phase which consisted of the review and finalization of the entire strategic plan. The process began with key California Sea Grant personnel and interested parties (Figure 2) and proceeded through to different California Sea Grant interested parties as the phases progressed. For example, California Sea Grant's internal and governing bodies, including the California Sea Grant Advisory Board and RASGAP (green and blue circles) were engaged in the framework and goals phases, while input from California Sea Grant partners, community and California citizens was included in the final review phase.



Figure 1. The California Sea Grant Strategic planning process that occurred from January to October 2022 and included the framework, goals and review phases.

STRATEGIC PLANNING PROCESS

FRAMEWORK PHASE

The process started with an overview of the strategic planning process and an initial assessment of the previous strategic plan. This assessment identified the previous plan’s strengths and weaknesses, core values, priority focus and functional areas as well as which relevant parties and local community members were engaged in the process. An initial survey was filled out by California Sea Grant’s internal personnel and the Advisory Board. Within the survey, participants indicated their preference on where and how they wanted to be included during the strategic planning process, ensuring that we did not miss out on opportunities for engagement.

Following the initial assessment, the strategic planning team held an All Hands California Sea Grant meeting to present the results of the survey to internal California Sea Grant personnel. Participants at the meeting discussed general thoughts, prioritized core values and drafted the first version of the mission and vision. The mission, vision and core values were iteratively assessed by California Sea Grant personnel throughout subsequent meetings.

GOALS PHASE

To start off the goals phase, California Sea Grant held a full-day strategic planning retreat to flesh out the Focus Areas and Goals. Afterwards, Focus Area Leads held two working groups to review and iterate on the Focus Areas, goals and topics. Working groups consisted of California Sea Grant personnel and Advisory Board and RASGAP members. The Focus Area Working Groups were where much of the dialogue and refining occurred to develop the language and topics for the Focus Areas and Goals.

REVIEW PHASE

The review phase served as an open comment period within which interested parties (Figure 2) had the opportunity to review and, in response to a survey, submit comments on the revised draft strategic plan which were then integrated into the final strategic plan.



Figure 2. Interested parties that are essential to the California Sea Grant program and were involved in the strategic planning process.

GOAL

The goal of this Strategic Plan is to serve as a guide to those looking to collaborate with California Sea Grant but also to be used for assessment of the California Sea Grant program by the NOAA National Sea Grant office.

We have intentionally focused the plan on the goals and outcomes in order to make the plan more readable and accessible, while specific actions will be carried out by the functional areas of California Sea Grant and are addressed in greater detail through individual projects. Furthermore, the plan needs to track the National Sea Grant plan, so the Focus Areas and other aspects of the content and structure are broadly aligned with the National Sea Grant Office while specific project actions will range depending on diverse geographic needs.

In going through the strategic planning process, our goal was to listen to and understand the most pressing and priority needs of the state. We then drafted our strategic plan based on what was most impactful to the California Sea Grant community as well as feasible given the program's existing and projected capacity from 2024-2027. As such, the plan, although meant to be as inclusive as possible, does not necessarily cover all that is important in the State of California and nationally. In this way, partnerships are central to California Sea Grant in order to ensure that we are working toward addressing some of the most important and pressing coastal and marine issues within California.

ACKNOWLEDGMENTS

We are grateful to everyone in the California Sea Grant community who provided support, input and guidance throughout the process.

The strategic planning team provided invaluable leadership and support throughout the development of the plan. The California Sea Grant Communications team was instrumental in helping make the strategic planning text cohesive and understandable to a broader audience. The California Sea Grant Advisory Board and RASGAP members provided essential feedback on the process through surveys, discussions and focus area working groups. In addition, many reviewers provided invaluable feedback during the finalization of the strategic plan.

GLOSSARY

COASTAL - primarily refers to California's coastal counties and adjacent areas that significantly interact with the environmental or social dynamics of the coast, such as the Sacramento-San Joaquin River Delta region and upstream regions of coastal watersheds

CONSERVATION AQUACULTURE - Cultivation of aquatic organisms for use in the management and/or protection of a natural resource

COASTAL COMMUNITY - a group of people of any size whose members have shared interests, attitudes, goals, cultural or historic heritage or other characteristics and/or shared location(s) within California's coastal counties or in adjacent areas that are environmentally or socially connected to the coast. Examples of communities in coastal California include, but are not limited to, tribal nations and other Indigenous populations; neighborhoods, districts, towns or cities; residents of a particular biogeographic area (e.g., a subwatershed); industry groups and their stakeholders (e.g., commercial fishing communities)

COMMUNITY ENGAGEMENT - a process of inclusive participation that supports mutual respect of values, strategies and actions for an authentic partnership of people affiliated with or self-identified by geographic proximity, special interest or similar situations to address issues affecting the well-being of the community of focus

COMMUNITY PARTICIPATORY SCIENCE - a place-based research and outreach strategy providing inclusive and equitable opportunities for diverse participants to engage voluntarily in the scientific process thereby helping to advance science and inform decision-making (synonymous with community science and citizen science)

CO-PRODUCTION - a collaborative process where knowledge generators and users work together to reach a collective outcome. This includes collaboration with project partners in the entire knowledge generation and translation process

ECOSYSTEM SERVICES - benefits people obtain from ecosystems

SUPPORTING SERVICES - ecosystem services that are foundational to the production of all other ecosystem services

REGULATING SERVICES - the benefit provided by ecosystem processes that moderate natural phenomena

PROVISIONING SERVICES - the material, tangible benefits that people obtain from ecosystems (e.g., food, other types of provisioning services including drinking water, timber, wood fuel, natural gas, oils, plants that can be made into clothes and other materials and medicinal benefits)

CULTURAL SERVICES - the non-material benefits that people obtain from ecosystems (e.g., through recreation, tourism, intellectual development, spiritual enrichment, reflection, creative and aesthetic experiences). Cultural services include the 'intrinsic value' of ecosystems which acknowledges the integrity of all species and ecosystems and is the objective value of the ecosystem in and for itself

ENVIRONMENTAL LITERACY - knowledge and understanding of a wide range of environmental concepts, problems and issues and understanding the system that they operate in; cognitive and affective dispositions toward the environment; cognitive skills and

abilities; and appropriate behavioral strategies to make sound and effective decisions regarding the environment. It includes informed decision-making both individually and collectively and a willingness to act on those decisions in personal and civic life to improve the well-being of other individuals, societies and ecosystems from local to global scales

EVIDENCE-BASED KNOWLEDGE - refers to information collected or developed through scientific methods and/or from traditional, Indigenous and local knowledge experts

EXTENSION - the application of science-based knowledge to solving many of the urgent problems confronting coastal, marine and Great Lakes communities. This can include conducting research, community engagement/outreach and education

FORMAL EDUCATION - learning that is part of a structured education system that runs from primary (and in some countries from nursery) school to university and may include specialized programs for vocational, technical and professional training. This often includes classroom and/or field-based learning provided by trained educators

INDIGENOUS PEOPLES - refers to First Nations, American Indian and Aboriginal peoples including from federally-recognized Tribes

INFORMAL EDUCATION - Learning that happens outside of a structured curriculum, such as in after-school programs, community participatory science programs, community-based organizations, museums, libraries or at home. This also includes experiential learning, such as learning that is gathered from spending years on the ocean

OUTREACH - communicating about a proposed project and its results to an audience that is interested in or affected by the results (i.e., coastal communities, industry)

PARTICIPATORY GOVERNANCE - a method of management in which decision-makers, whether with primary or delegated authority, are committed to involving affected constituencies in decisions as much as possible

RESEARCH - the systematic investigation into and study of materials and sources to establish facts and reach new conclusions

RESILIENCE - the ability to prepare and plan for, absorb, recover from and more successfully adapt to adverse events and changing conditions (e.g., severe weather, climate change, economic disruptions, demographic shifts, ecosystem changes)

RESTORATIVE AQUACULTURE - Commercial or non-commercial aquaculture that provides direct ecological benefits to the environment with the potential for net-positive environmental outcomes

UNDERSERVED COMMUNITY - a community that has been or is currently systematically excluded from research and/or policymaking processes, and/or facing inequity

UNDERREPRESENTED GROUPS - refers to those that have lower representation in marine and coastal sciences than their representation in California's population, including Blacks, Latine, nonbinary gender identities, and persons with disabilities

CALIFORNIA SEA GRANT STRUCTURE

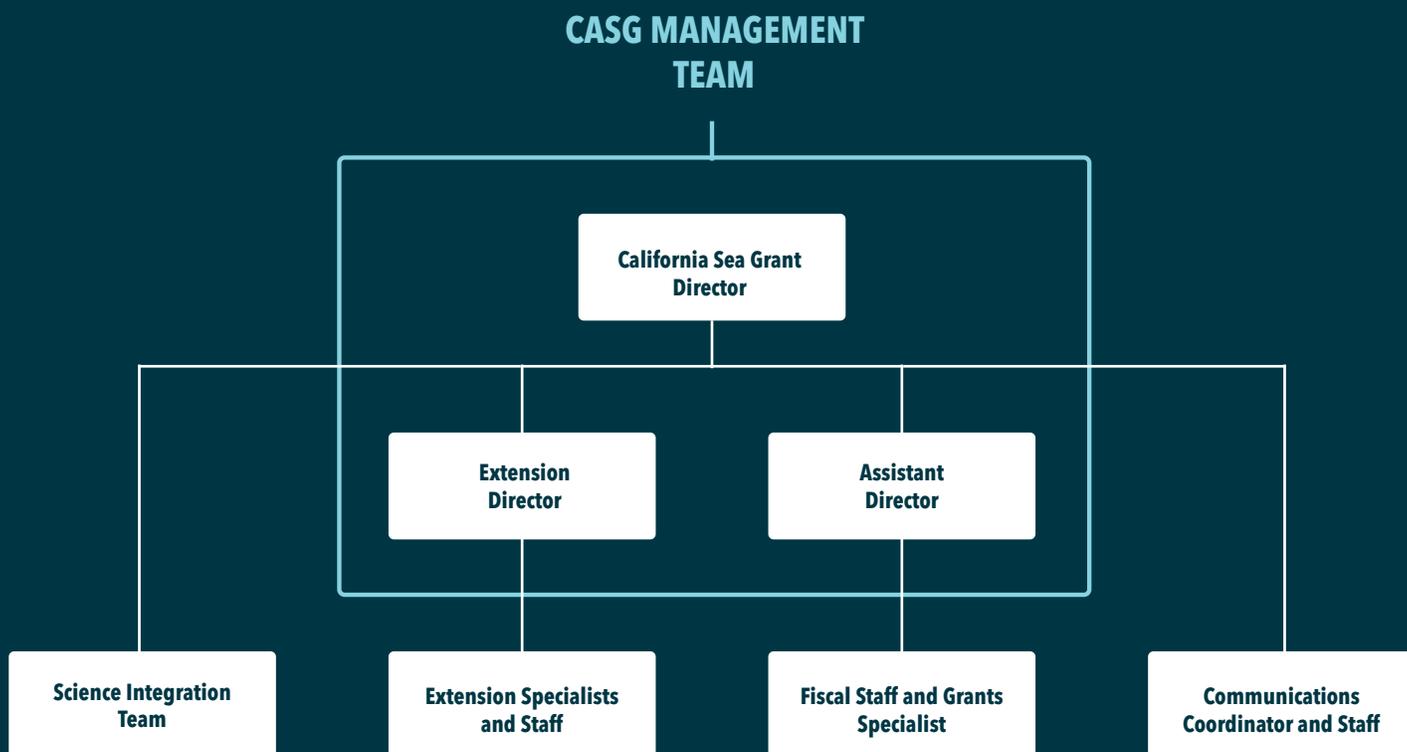
California Sea Grant (CASG) is a collaboration of the National Oceanic and Atmospheric Administration (NOAA), the State of California and universities across the state to create knowledge, products and services that benefit the economy, the environment and the citizens of California.

CASG functions as part of a national network of 34 programs under the National Sea Grant College Program (NSGCP) within NOAA. The NSGCP provides core federal funds to the individual Sea Grant programs to support research, extension, outreach and education activities that reflect both the national and individual programs' goals and objectives.

The West Coast faces a breadth of issues (e.g., ocean acidification, exposure of coastal communities and habitats to storm events and sea level rise) that are not delimited by political boundaries. Thus, CASG substantively collaborates with California coastal communities including industries, community-based groups and non-profits; California agencies, such as the California Ocean Protection Council (OPC) and California Department of Fish and Wildlife (CDFW); other Sea Grant programs including Washington, Oregon and the University of Southern California, NSGCP and other NOAA agencies to promote and support regionally focused research, engagement, outreach and education programs.

ORGANIZATIONAL STRUCTURE

The University of California, San Diego (UCSD) administers the California Sea Grant Program (California Sea Grant). Offices that host administration, fiscal and communication staff are located at the Scripps Institution of Oceanography campus. Sea Grant Extension Program personnel live and work at various locations throughout the state.



ADVISORY STRUCTURE

There are two principal boards and committees that provide advice to CASG, the California Sea Grant Advisory Board and the Resources Agency Sea Grant Advisory Panel. The California Sea Grant Advisory Board provides overall policy advice and strategic planning guidance to the Vice Chancellor for Marine Science at UCSD and to CASG. The State of California additionally interacts with CASG through the Resources Agency Sea Grant Advisory Panel (RASGAP), which provides guidance on state priorities and research needs. Input from these committees is used in program planning, development and coordination directed toward meeting state and regional marine resource priorities.

CALIFORNIA SEA GRANT ADVISORY BOARD

- Amber Mace, Executive Director, California Council on Science and Technology, Sacramento, CA
- Noelle Bowlin, Research Fishery Biologist, NOAA Southwest Fisheries Center, La Jolla, CA
- Mike Conroy- West Coast Director, Responsible Offshore Development Alliance, Southern California
- Jeff Gee, Professor, Scripps Institution of Oceanography at the University of California, San Diego. La Jolla, CA
- Jenn Eckerle, Acting Executive Director, California Ocean Protection Council, Sacramento, CA
- Yvonne Harris, Associate Vice President, Office of Research, Innovation and Economic Development, California State University-Sacramento, Sacramento, CA
- Barbara Page, Co-Founder, VP of Operations, Anthropocene Institute, Menlo Park, CA
- Corey Ridings, Manager of Fish Conservation, Ocean Conservancy, Santa Cruz, CA
- Terry Sawyer, Hog Island Oyster Company, Marshall, CA
- Rebecca Smyth, West Coast Director, Regional Division Chief, NOAA Office of Coastal Management, Oakland, CA
- Valerie Termini, Chief Deputy Director, California Department of Fish and Wildlife, Sacramento, CA
- Ron Tjeerdema, Executive Associate Dean and Distinguished Professor, University of California, Davis Bodega Marine Laboratory, Bodega Bay, CA
- Steve Weisberg, Executive Director, Southern California Coastal Water Research Project (SCCWRP), Costa Mesa, CA

RESOURCES AGENCY SEA GRANT ADVISORY PANEL (RASGAP)

Membership of RASGAP changes regularly and is based on decisions made by the staff of the Ocean Protection Council, administered within the California Natural Resources Agency. However, according to the state statute, the RASGAP consists of representatives from the:

- California Resources Agency
- California Division of Boating and Waterways
- California Department of Conservation
- California Department of Fish and Wildlife
- Office of Oil Spill Prevention and Response
- Office of Environmental Health and Hazard Assessment
- State Water Resources Control Board
- State Lands Commission
- California Coastal Commission



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