

CONNECTICUT SEA GRANT 2024-2027 STRATEGIC PLAN

PLANNING PROCESS

The University of Connecticut is the State's Sea Grant institution. The Connecticut program began with a marine extension program in 1974 and grew in scope to achieve full-fledged Sea Grant College status in 1988. For 34 years, Connecticut Sea Grant (CTSG) has worked to foster the balanced use and conservation of coastal and marine resources of the Long Island Sound (LIS) estuary, as well as work regionally, nationally and globally on issues of relevant concern. This plan recognizes the importance of coastal ecosystems and their watersheds, and explicitly acknowledges that coastal ecosystems include people. The strategy for success of any individual Sea Grant program must be consistent with the overall vision and direction of the NOAA National Sea Grant Program. It must also be tuned into the environmental, social and economic priorities and problems presented within the program's specific location. For CTSG this includes the State of Connecticut, Long Island Sound and its watershed, extending to the Northeast Region and beyond.

This plan was developed iteratively in parallel with the new 2024-2027 National Sea Grant College Program Strategic Plan. The planning process started with internal discussions to help define the vision, mission, guiding principles and core values (the "why we do this" section of the plan). The focus areas, goals and performance measures (the "what we do" sections of the plan) were informed by a stepwise stakeholder engagement process.

An online survey served to identify broad priority areas. The survey was distributed through CTSG listservs and broadly distributed to our partners and stakeholders, with the request that they also share broadly, with the goal of receiving input from those we work with, as well as those we may not be reaching or hearing from at this time. Survey results showed that 25% of respondents had not engaged with CTSG staff or programs in the previous two years, confirming significant input from stakeholders not currently engaged. Survey results also demonstrated input from a broad diversity of stakeholders, including from respondents self-identifying as concerned citizens, coastal property owners, part of the research, natural resources management, NGO, education or communications communities¹ or the private sector.

The results of the survey provided background information for further engagement with stakeholders across the different focus areas to ground truth and refine the results of the general survey through additional surveys and/or further discussions with colleagues and stakeholders, individually or in small groups, in person or through email. This also included formal engagement of the CTSG Senior Advisory Board for direct input in the strategic planning process.

¹ As an important note, across this plan, communities are defined not necessarily as constrained by geopolitical boundaries (towns), but inclusive of social, cultural, economic and other factors (such as the fishing community).

Overall, the development of the CTSG strategic plan was informed by meaningful input and feedback from Connecticut stakeholders and partners representing a broad diversity of individuals and organizations, and oversight from the CTSG Senior Advisory Board.

VISION: Shared benefits from our waters and watersheds

MISSION: CTSG commits to listening, learning and taking science-based actions in partnership with others to support thriving and diverse coastal ecosystems, communities and economies.

CORE VALUES

Sea Grant's core values are essential and enduring tenets that influence the organization and support its mission. Values are about one's faith, beliefs, and opinions pertaining to certain ideas or issues. Values are internal, subjective, and malleable, the reasons why you do what you do and think what you think. Connecticut Sea Grant embraces the following core values:

- **Science-based/driven, evidence-based/driven** – CTSG programs are anchored in objective, science-based information. CTSG is not an advocacy organization and aims to act as a neutral broker/provider/clearinghouse of unbiased information and convener of parties who may at times have different opinions. CTSG harnesses the power of the academic community to support sound science and expand the frontiers of knowledge through research and innovation, and communicates research results through its extension, communications and education programs for the benefit of society. CTSG strives to support innovative research that will lead to real-life applications with associated economic and environmental benefits.
- **Partnerships and leveraging** – CTSG staff build and nurture collaborative and mutually-beneficial partnerships with local, regional, national and international partner organizations and institutions, in both the public and private sector, with the end users of our outputs, and are engaged in their communities. CTSG staff strengthen the capacity of its partners to engage in research, outreach and education. CTSG seeks to leverage capacity and resources with its partners to maximize the efficiency and outcomes of its activities.
- **Responsive** – CTSG programs are meant to be informed by and responsive to stakeholder needs. In addition to sharing information, CTSG staff listen to their diverse communities to identify ongoing and emerging needs. CTSG aims to remain as flexible and nimble as possible to be responsive to those needs.
- **Leadership** – CTSG encourages its staff members to assume leadership roles that result in new knowledge, forward looking and innovative approaches and practices, enhanced strategic thinking, networking and sharing of information at local, state, regional, national

and international levels. Assuming leadership roles strengthens our program while enhancing our skills and credibility.

CROSS-CUTTING PRINCIPLES

Cross-cutting guiding principles are objective standards independent from one's beliefs or opinions. Principles are often part of most traditions and philosophies and transcend individuals and cultures. Principles govern how people behave and interact in various situations, often in a firm and consistent stance. Establishing a set of principles creates a compass to which one can refer whenever something is in doubt or one needs to take a stand or evaluate any opportunity, behavior, or situation. Connecticut Sea Grant abides by the following three guiding principles:

- **Equity and Justice** – CTSG aims to assure a fair allocation and accessibility of resources, so that everyone has the same opportunity, and CTSG services are equally available to everyone. CTSG recognizes that this may require paying particular attention to underserved groups or offering additional support where more support is needed. CTSG recognizes the diversity of its stakeholders, with people with different identities, knowledge sets, experiences and perspectives, and aims to be inclusive by creating an open and welcoming environment that recognizes and affirms the value and dignity of all people. This may require providing information and services in a form that meets stakeholder needs. These efforts aim towards the complementary principle of justice, the systematic removal of barriers that result in equitable opportunities and outcomes for every individual in a diverse society. Within available resources, CTSG strives to deliberately commit towards the principles of equity and justice.
- **Integrity** – CTSG embraces the principles of honesty, trustworthiness, respectfulness, transparency, accountability, and professionalism. CTSG believes that learning is essential to improvement, and that honesty regarding challenges and failures promotes learning and improves CTSG's capacity to effect positive change. CTSG staff are held accountable for meeting the programmatic and financial obligations of their work while addressing stakeholder needs.
- **Objectivity** – CTSG serves as neutral and objective brokers of science-based information for the purpose of informing and engaging stakeholders in dialogue on coastal and marine ecosystem challenges and opportunities.

FOCUS AREA 1: SUSTAINABLE AQUACULTURE AND FISHERIES

Connecticut's aquaculture and fisheries sectors provide local food and jobs and contribute significantly to the state's maritime economy. The state has a large and historically important shellfish aquaculture industry and developing kelp and marine finfish aquaculture sectors. The industry generates greater than \$25 million in farm-gate revenue and provides hundreds of jobs. The commercial fishing sector, another historically important economic driver, landed 8.5 million pounds in 2021 with an ex-vessel value of \$15.4 million. Recreational fishing and shellfishing are important sectors from both an economic and cultural perspective. State-managed marine finfishing opportunities exist coastwide with nearly 400,000 anglers participating in this activity annually. In addition, fifteen coastal towns manage recreational shellfisheries and sell roughly 100,000 permits each year to both residents and non-residents.

The landscape of the commercial aquaculture and fisheries sectors has changed dramatically over the past few years, due to factors such as a changing climate that has shifted species abundance and distribution, gear-based aquaculture systems that have become more prevalent and visible along our coastlines, the COVID-19 pandemic and its cascading effects on the seafood marketing and distribution system, and 40-year high inflationary costs. CTSG staff reflected on these changes, considered input from the 2022 CTSG Stakeholder Engagement Survey, evaluated its capacity and streamlined its plan. CTSG is placing most of its efforts on commercial aquaculture and supporting the management of recreational shellfisheries and shellfisheries habitats, while supporting commercial and recreational fisheries to fill necessary gaps or address emerging concerns.

We are also placing a greater emphasis on engagement with coastal communities to understand their interests and concerns regarding growth of aquaculture and fisheries. While we acknowledge the National Sea Grant mandate to support aquaculture development, we do so while considering the values of the communities in which aquaculture is being considered or proposed. We will continue to engage the sectors to better understand and help address their needs by leading local, regional and national planning initiatives (e.g., CT Shellfish Initiative, CT Seaweed Stakeholder Initiative, Southern New England Shellfish Aquaculture Outreach Hub, National Seaweed Hub). We provide key training (e.g., Seafood Safety, Safety at Sea, Shellfish Aquaculture Husbandry), facilitate sector meetings (annual Shellfish and Seaweed Industry meetings), and decision-making tools (regulatory guides and map viewers) to support workforce development and the management of these sectors.

GOAL 1: Aquaculture and fisheries and other coastal natural resources supply food, jobs and economic, environmental and cultural benefits.

Objectives:

- 1.1. Engage aquaculture and fisheries sectors, and resource managers to better understand needs to inform future research, outreach and extension programs.
- 1.2. Engage communities to understand their concerns and values about aquaculture and fisheries to inform future research, outreach and extension programs.
- 1.3. Provide best available science, information and tools to resource managers, the aquaculture and fisheries sectors, communities and consumers.
- 1.4. Provide business planning, product and market development, and permitting assistance to the aquaculture and fisheries sectors.
- 1.5. Support development of a trained and diverse workforce and enhance technology transfer. *(crosscuts with ELWD focus area)*

GOAL 2: Natural resources are sustainably managed to support fishing communities and industries, including commercial, recreational, subsistence fisheries and aquaculture.

Objective:

2.1. Provide best available science, information and tools to resource managers, restoration practitioners, shellfish aquaculture sector and communities.

FOCUS AREA 2: HEALTHY COASTAL ECOSYSTEMS

Long Island Sound is a nationally significant estuary located in the densely populated New York City-to-Boston metropolitan region. The Long Island Sound estuary provides exceptional economic and ecological benefits. Pressures from the region's large population, ongoing development and impacts from a changing climate have resulted in loss and degradation of tidal wetlands and marshes, riparian buffers, coastal islands, forests and grasslands, and shellfish reefs/beds as well as the species dependent on these habitats. Management and protection of ecologically significant areas and significant human use areas (identified in 2021 LIS Blue Plan) rely on overall water and environmental quality and the health of living resources and habitats, and needs to account for socioeconomic and environmental justice considerations.

To address these concerns, CTSG will focus on maintaining and developing new partnerships with federal and state entities and NGOs to identify and prioritize ongoing and emerging issues associated with Long Island Sound ecosystems. CTSG is an active member of the bi-state Long Island Sound Study (LISS) and strives to address goals and objectives of mutual interest in the LISS Comprehensive Conservation and Management Plan (CCMP). CTSG participates on steering committees overseeing the Long Island Sound Mapping Initiative, the Long Island Sound Blue Plan implementation and the CT National Estuarine Research Reserve (CTNERR) designated in 2022. In collaboration with New York Sea Grant, CTSG is facilitating the implementation of the 2022-2027 Long Island Sound Marine Debris Action Plan. With the NC and NH Sea Grant programs, CTSG is co-leading a Sea Grant national discussion to determine its role in addressing contaminants of emerging concern.

GOAL 3: Coastal and marine waters, habitats, ecosystems and the living resources and services they provide are protected, enhanced and/or restored.

Objectives:

3.1. Engage partners, resource managers and interested communities to better understand needs to inform future research, outreach and extension programs.

3.2. Co-develop, improve and share knowledge about causes of changing coastal and marine ecosystems and effects on the services they provide.

3.3. Co-develop, improve and share knowledge about the economic and ecological value of ecosystem resources and services (to inform decision making).

3.4. Co-develop, improve and share knowledge, decision-support tools, technologies and approaches that facilitate the conservation, management and restoration of coastal and marine habitats, species and ecosystem services.

3.5. Co-develop, improve and share knowledge on low impact development, stormwater management and watershed management measures that minimize impacts on Long Island Sound, in partnership with UConn's Center for Land Use Education and Research.

3.6. Co-develop, improve and share knowledge on impacts to water quality of the LIS watershed and relevant mitigation measures.

3.7. Assess needs and develop tools and training programs that can enhance decision making and policy development, in coordination with individuals, communities, managers and stewards.

3.8. Identify opportunities and develop projects in which ecosystem and species conservation intersect with goals and objectives in aquaculture and resilience. (e.g., shellfish restoration/living shorelines and riparian buffers.)

FOCUS AREA 3: RESILIENT COMMUNITIES AND ECONOMIES

The resilience of Connecticut's coastal communities and maritime economies is impacted by climate change, severe weather events and other hazards. Climate change is already causing increased storm intensity, sea level rise, warmer air and water temperatures, increased coastal flooding due to storm surge, increased coastal erosion and increased extreme precipitation events. Other hazards may include harmful algal blooms (HABs) and invasive species. Vulnerable groups, including low-income populations, people of color, the elderly, people with disabilities and communities with environmental justice concerns, tend to bear disproportionate impacts from these hazards.

CTSG responds to the challenges of the climate crisis by helping communities prepare for the consequences and threats associated with a changing climate (e.g., build resilience). CTSG broadly defines communities as a variety of marine and coastal interests (e.g., individuals, government, business, education, industry, research, non-governmental organizations, etc.) served by the Connecticut Sea Grant College Program. While numerous entities and programs focus on community resilience, CTSG continues to work directly with communities on the coast and in the Long Island Sound watershed to assess their needs, enhance awareness and preparedness and facilitate implementation of adaptation and mitigation actions.

As a result of emerging state and federal roles in supporting the development of offshore renewable energy resources off the Northeast coast, CTSG has undertaken a new role in navigating the environmental and socioeconomic opportunities and challenges associated with the new blue economy. CTSG seeks to facilitate balanced developments in ports, coastal and marine waters, providing information through public engagement with new and traditional blue economy stakeholders on potential impacts and benefits of offshore renewable energy projects and associated infrastructure.

GOAL 4: Communities have the necessary resources and knowledge to enhance their resilience by preparing for and adapting to extreme and chronic weather and coastal hazards associated with climate change and associated economic disruptions and other threats to community health and well-being.

Objectives:

4.1. Improve and expand exchanges of knowledge to better identify the diverse needs of communities and to increase the public's understanding of changing conditions, hazards and related impacts.

4.2. Support research and the development of information, tools and technical support that address identified community needs and related socioeconomic considerations.

4.3. Work with communities to utilize actionable science to advance collaborative and comprehensive planning and implement adaptive management strategies.

4.4. Work with communities and partners to explore and support diversification, sustainability and social equity within coastal economic sectors and the blue economy.

FOCUS AREA 4: ENVIRONMENTAL LITERACY AND WORKFORCE DEVELOPMENT

Environmental literacy is an awareness of and concern about the environment and its associated problems, as well as the knowledge, skills, and motivations to work toward solutions of current problems and the prevention of new ones. The success of all focus areas relies upon our collective work in helping people become environmentally literate.

The education of future environmental professionals and leaders is critical to supporting the responsible use and management of our nation’s ocean and coastal resources. Science and engineering majors, future marine scientists, and education professionals need opportunities to learn science in real world settings and apply their skills at work under the mentorship of practicing scientists. Similarly, current environmental professionals need opportunities to master new skills or meet changing requirements to stay competitive in an ever-evolving workplace. Producing and sustaining an environmentally and scientifically literate society, a group of technical, policy and managerial professionals, and a network of active volunteers to serve on boards and commissions, is essential. Further, an environmentally and scientifically literate society can help provide a stream of interested and engaged citizens.

CTSG is recognized for its leadership in environmental literacy at the local to international scale while remaining relevant to local and regional workforce development needs. While other entities contribute to environmental and ocean literacy by attracting audiences to their sites (e.g., aquariums, marine education non-profits) or delivering classroom programs, CTSG partners with educators, formal and non- formal educational organizations, and institutions of higher education to develop and share resources, approaches, and opportunities. Environmental literacy activities and workforce development efforts are not limited to “Environmental Literacy and Workforce Development” but rather are interwoven into all the focus areas to be as innovative and responsive as possible in view of needs and opportunities. It remains important for CTSG to be flexible and adaptive in not only the content of its programs, but also the delivery.

GOAL 5: A diverse, environmentally literate public that understands, values, and respects the coastal environment and maritime heritage.

Objectives:

5.1. Create and implement education resources and opportunities for formal, non-formal and other learners.

5.2. Identify, generate, and communicate information on historical, current and emerging coastal topics and issues.

5.3. Create, explore, and implement multiple ways of learning and knowing into education opportunities.

5.4. Facilitate relevant Science, Technology, Engineering, Arts and Mathematics (STEAM) education opportunities.

5.5. Develop and enhance the teaching and learning of ocean and coastal science content through educational research, assessment and evaluation strategies.

GOAL 6: A diverse, skilled and environmentally literate coastal, marine and maritime workforce.

Objectives:

6.1. Support student career development through research, education and outreach, training opportunities and support for fellowships and internships.

6.2. Facilitate the development of a responsive and diverse workforce through skill building and training opportunities.

6.3. Identify and work towards removing barriers to accessing training and learning opportunities.

PERFORMANCE MEASURES AND METRICS

These include both national (NPM) and Connecticut Sea Grant-specific (CTPM) performance measures, organized by focus area.

Sustainable Aquaculture and Fisheries

NPM: Number of fishers, seafood processors and aquaculture industry personnel who modify their practices using knowledge gained in fisheries sustainability and seafood safety as a result of Sea Grant activities.

CTPM: Number of new or upgraded shellfish acreage for commercial or recreational purposes

CTPM: Number of new aquaculture certificates (seaweed and shellfish producers), applications and permits as a result of CTSG and partner activities.

CTPM: Number of new tools, technologies, approaches or programming developed to enable fishing and aquaculture industries to supply safe and sustainable seafood as a result of CTSG and partner activities.

CTPM: Number of new tools, technologies, approaches or programming developed to inform audiences about Connecticut fisheries, aquaculture, marine resources and maritime heritage as a result of CTSG and partner activities.

Healthy Coastal Ecosystems

NPM: Number of acres of coastal habitat protected, enhanced, or restored as a result of Sea Grant activities.

NPM: Number of resource managers who use ecosystem-based approaches in the management of land, water, and living resources as a result of Sea Grant activities.

CTPM: Number of policies/management tools that are developed/adapted/used, so that habitats and species are better managed, restored and conserved as a result of Sea Grant activities.

CTPM: Number of species that are managed/restored/conserved as a result of Sea Grant activities.

Resilient Communities and Economies

NPM: Number of communities that adopt/implement sustainable economic and environmental development practices and policies as a result of Sea Grant activities.

NPM: Annual number of communities that adopt/ implement hazard resilience practices to prepare for and respond to/minimize coastal hazardous events.

Environmental Literacy and Workforce Development

NPM: Number of Sea Grant products that are used to advance environmental literacy and workforce development.

NPM: Number of people (youth and adults) engaged in Sea Grant-supported non-formal education programs.

NPM: Number of Sea Grant supported graduates who become employed in a job related to their degree within two years of graduation.

CTPM: Number of experts who share their knowledge and experience with audiences as a result of CTSG and partner activities and resources.

CTPM: Number of people who participate in specific activities targeted to develop new or enhanced career relevant skills as a result of CTSG and partner activities.

CROSS-CUTTING NATIONAL PERFORMANCE MEASURES AND METRICS

NPM: Number of Sea Grant tools, technologies and information services that are used by our partners/customers to improve ecosystem-based management.

NPM: Economic and societal impacts and benefits derived from Sea Grant activities (market and non-market; jobs and businesses created or sustained; patents)

NPM: Number of Postsecondary students and degrees financially supported by Sea Grant in higher education programs (undergraduate, graduate)

NPM: Number of P-12 Students reached through Sea Grant-trained educators.

NPM: Number of P-12 Students who participated in Sea Grant-supported formal education programs

NPM: Number of P-12 Students Reached Through Sea Grant-Trained Educators

NPM: Number of educators who participated in Sea Grant-supported professional development programs.

NPM: Number of individuals certified or recertified in Hazard Analysis Critical Control Point (HACCP) as a result of Sea Grant activities.

NPM: Number of peer-reviewed publications produced by Sea Grant.

NPM: Number of individuals and full-time equivalents (FTEs) devoted to Sea Grant.

NPM: Number and origination of core funding pre-and full proposals.

NPM: Number of volunteer hours.

NPM: Number of Sea Grant sponsored/organized events.

NPM: Number of attendees at Sea-Grant sponsored/organized events.

NPM: Number of public or professional presentations.

NPM: Number of attendees at public or professional presentations.

NPM: Visitor Attendance: Number of people that visit museums, aquariums, and other informal education institutions hosting NOAA-supported exhibits or programs

NPM: Environmental Actions: Number of people participating in environmental actions through NOAA education programs

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