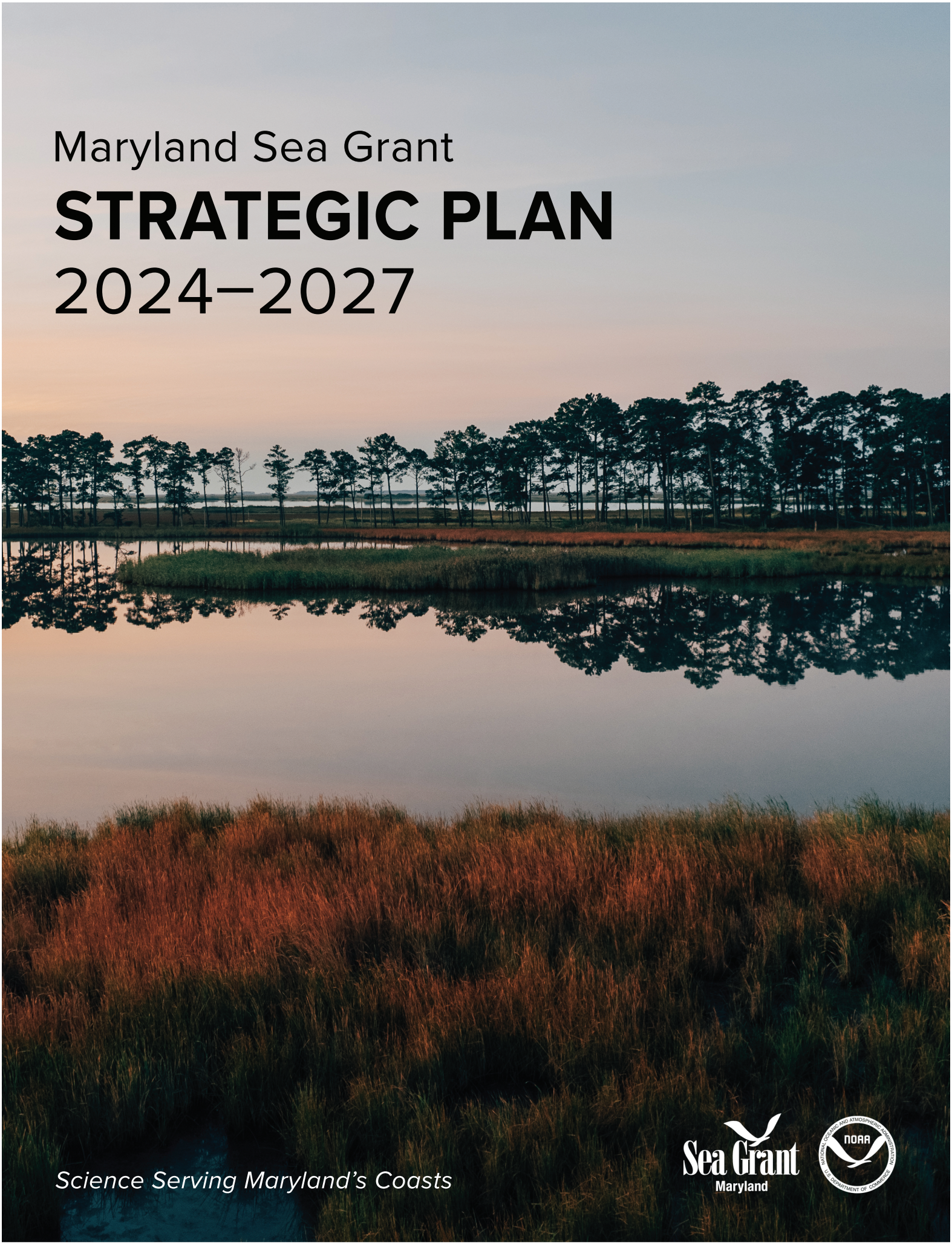
Maryland Sea Grant

STRATEGIC PLAN 2024–2027



Science Serving Maryland's Coasts

Sea Grant Maryland

NOAA

Maryland Sea Grant

STRATEGIC PLAN
2024–2027

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NOAA National Oceanic and Atmospheric Administration U.S. Department of Commerce

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Cover photo, Yazan Aboushi / MDSG

INTRODUCTION

The Chesapeake Bay watershed touches all of Maryland's counties and drains over 95 percent of state land. It dominates Maryland's history, ecology, and economy. For over 40 years, Maryland Sea Grant (MDSG) has worked to support research to address knowledge gaps in science-based management; to guide extension and outreach efforts to engage multiple audiences; and to drive formal and nonformal education work to build a science-literate workforce across the Chesapeake and coastal bays and their watersheds. Integrating among these efforts, MDSG creates programming to address critical environmental issues, including restoring water quality, supporting sustainable fisheries, addressing climate change, and building resilient communities.

Maryland Sea Grant operates within a complex coalition of federal and state agencies, non-governmental organizations, local municipalities, and universities drawn from six states and the District of Columbia. This coalition is committed to the conservation and restoration of the Chesapeake and coastal bays and their watersheds and has accomplished much. However, solutions remain elusive for outstanding challenges, like the increasing urbanization of the watershed, unequal access to environmental services, historical and ongoing environmental injustices that disproportionately impact historically underserved communities, and responding to the effects of climate change. In this complex nexus of policy and environmental change, MDSG occupies an important niche supporting science-based efforts to address conservation, restoration, sustainability, and coastal resilience.

Critical partnerships with the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Congress allows MDSG to fully serve our Maryland constituents and to join in the effort to restore and protect the health and economic resilience of coastal waters in Maryland and the Mid-Atlantic region. Our programming is influenced by key federal and state environmental management drivers in Maryland. These include the Chesapeake Bay Watershed Agreement, the EPA's Chesapeake Bay Total Maximum Daily Load (TMDL) requirements, the Maryland Commission on Climate Change, the Maryland Commission on Environmental Justice and Sustainable Communities, the Next Generation Science Standards, Maryland's Environmental Literacy Standards, the National Oceanic and Atmospheric Administration's policy, congressional direction, Executive Orders, and numerous state and regional plans.

Administratively, MDSG is a congressionally mandated, federal-state partnership program that is overseen by a federal government entity, the National Sea Grant Office (NSGO) of the National Oceanic and Atmospheric Administration (NOAA). It is administered through the University of Maryland Center for Environmental Science (UMCES) in critical partnership with the University of Maryland Extension (UME) program, which is administered by the College of Agriculture and Natural Resources within the University of Maryland College Park (AGNR/UMCP). Our effectiveness as a program depends on understanding the priorities and strengths articulated in strategic plans of those organizations that fund, oversee, and collaborate with our program. We look to align our strategic plan with the strategic plans of key partners: NOAA's National Sea Grant College Program, the University System of Maryland (USM), UMCES, and AGNR/UMCP. This 2024–2027 strategic plan outlines our goals, outcomes, and strategies to address constituent-driven priorities.

Vision 2024–2027

Sustainable communities and environments within Maryland's Chesapeake and coastal bays and watersheds.

Mission

Maryland Sea Grant fosters healthy coastal ecosystems, communities, and economies through science, education, outreach, and broad collaboration.

Core Values

- **Accountable.** We will responsibly manage our program, maintain staff excellence through professional development, and serve our constituents with distinction. We will continue to limit bias in our practices, including hiring, fellowship programs, and project selection and funding.
- **Collaborative.** We will commit to inclusive relationship building with people from all backgrounds and experiences who are dedicated to restoring and sustaining the Chesapeake and coastal bays and their watersheds.
- **Committed.** As a service organization whose strengths in administration, communication, education, extension, and research unite to advance our mission, we commit to a just, equitable, diverse, and inclusive organizational culture to meet program goals and achieve programmatic success by linking the talent of Maryland's academic and scientific communities to diverse constituencies.
- **Inclusive.** We will strive to promote inclusive programs and integrate education and awareness regarding social justice, equity, and inclusion in our core areas of research, education, extension, and communication.
- **Innovative.** We will support translational science to advance innovation, inform decision making, develop new products, and foster new economic opportunities.
- **Relevant.** We will engage in activities at multiple scales that are locally, regionally, and nationally responsive.
- **Responsive.** We will create opportunities and deliver programs and products that integrate research with outreach and education, and empower scientists, policymakers, managers, teachers, students, communities, and committed residents as they collectively work to understand issues and exercise their responsibility as stewards of the Chesapeake and coastal bays and their watersheds.

- **Transparent.** We will provide balanced and thoughtful information and programming to all of our constituents consistent with our vison and mission. We are a neutral broker, working to build and retain lasting relationships. We uphold a culture of transparency and integrity in service to our constituents.

Cross-Cutting Principles

- **Diversity.** Maryland Sea Grant affirms our commitment to justice, equity, diversity, and inclusion. We commit to working with people from all backgrounds and experiences so we can become a more educated, understanding, just, and compassionate community. Building diversity in our workforce and partnering with diverse communities brings the greatest breadth of ideas, cultures, experiences, and backgrounds together to build a more sustainable environment and just society. Diversity in our activities through expanded partnerships and leveraging of resources strengthens our program's and Maryland communities' resilience.

- **Partnerships.** Partnerships strengthen the quality of the research we support and extend our outreach to diverse audiences. They enrich our capacity to influence policy and achieve our strategic goals. We work closely with our local, regional, and national Sea Grant partners to advance research agendas, communication strategies, and educational programming and to leverage funding, thus greatly expanding our program's resources and reach. Key government partners include the Environmental Protection Agency's Chesapeake Bay Program Office; the NOAA Chesapeake Bay Office; the U. S. Fish and Wildlife Service, and numerous Maryland state agencies, including the Departments of Agriculture, Environment, Health, Natural Resources, and Planning. Non-governmental organizations with whom we partner serve as critical advocates for conservation, environmental justice, and restoration in the region. Many of our partners have key responsibilities for implementing policies particularly relevant to our programming.
- **Climate Change.** Recognizing the increasing threat of climate change to Maryland's economic and environmental health, and its disproportionate impact on many of our most disadvantaged communities, we must integrate across all our programming to support equitable adaptation and mitigation to respond to climate change. We must work closely with local governments and coastal communities to deliver services that reduce risks associated with a changing environment, particularly in our historically underserved communities.

STRATEGIC PLAN 2024–2027

The focus areas, goals, and outcomes below provide the strategic framework through which we shape our program strategies, shape our research priorities, and structure our work during the next four years. We select our activities so as to make wise investments, promote equity, and yield useful outcomes. We take a nimble and adaptive approach to advancing scientific understanding and applying science to help solve constituent-identified environmental problems. We work in an iterative manner to optimize our programmatic portfolio and respond quickly to emerging opportunities. To do so effectively, we strategically select issues we can address within our resources and capacities, in part by considering the following questions:

- Does the issue fall within Maryland Sea Grant's mission and would it be an appropriate university-based activity?
- Is the issue important to the region and the program's constituents?
- Will it advance Maryland Sea Grant's commitment to work with people from all backgrounds and experiences to become a more educated, understanding, just, and compassionate community?
- Will Maryland Sea Grant's support contribute meaningfully toward addressing the issue with a demonstrable application and impact?
- Will the issue remain "unaddressed" without our involvement?
- Are the talent and expertise adequate to address the issue available in Maryland?
- Would support from Maryland Sea Grant enhance the talent base and promote diversity for watershed, coastal, and marine issues?
- What engagement approach (e.g. in-person, virtual, hybrid, etc.) maximizes reach and impact for our target audience(s), and is it feasible?

Focus Area: Environmental Literacy and Workforce Development

Education, both formal and nonformal, is the foundation for individuals and communities to understand environmental issues, advance environmental justice, and engage in decision making that improves and sustains the Chesapeake and coastal bays and their watersheds. It intersects all our focus areas. Through the process of formal and nonformal education, individuals are prepared to investigate environmental complexities, explain scientific findings, and help improve the management of our environmental resources. Maryland Sea Grant (MDSG) pursues strategies to encourage project-based learning to deepen and broaden the knowledge and skill sets of students, educators, science practitioners, decision makers, and community scientists. Environmental education is the cornerstone of developing a diverse workforce in coastal sciences. Training and learning opportunities should attract and retain individuals in careers important

to coastal science and support future growth and advancement for employees in those roles. More broadly, we look to support programming that builds a more informed and environmentally literate citizenry, who are involved lifelong learners interested in advancing MDSG's efforts to support healthy coastal ecosystems and communities.

Goal 1 A diverse, environmentally literate public participates in lifelong formal and nonformal learning opportunities.

Outcomes

1.1 Individuals from diverse backgrounds are retained in STEM fields and consider themselves environmentally literate and lifelong STEM learners.

1.2 Educators, students, and lifelong learners are equipped with current information and innovative tools that meet or exceed relevant standards and practices.

1.3 Community members use their knowledge to act on issues for personal and social resilience and adaptation to changing economic, environmental, and social conditions.

1.4 Students from diverse backgrounds and needs are thoughtfully and intentionally supported in and have access to formal and experiential learning, research experiences, and career-readiness training.

Goal 2 A diverse, skilled, and environmentally literate workforce that is engaged and able to build prosperous lives and livelihoods through traditional and innovative careers.

Outcomes

2.1 Academic and professional opportunities, with particular emphasis on historically underserved people, improve environmental literacy skills, experiences, and the pursuit of advanced degrees in critical disciplines.

2.2 Individuals graduate from programs and move on to serve as leaders in their fields.

2.3 Employment in coastal and watershed communities expands and diversifies.

2.4 A workforce able to adapt and thrive in changing environmental, social, and economic conditions.

Focus Area: Healthy Coastal Ecosystems

Maryland Sea Grant (MDSG) will support actionable science leading to improved ecosystem-based decision making in collaboration with decision makers and a diverse range of constituents by providing the information and analyses needed for addressing complex socio-environmental issues in our watersheds, bays, coastal and marine waters. MDSG priorities include ecosystem processes; ecosystem responses to climate change effects, as

well as the natural and anthropogenic drivers of ecosystem change; mitigation and adaptation to the effects of climate change; water quality; and contaminants.

Goal 3 **Watersheds and coastal ecosystems, habitats, and the services they provide are protected, enhanced, and/or restored.**

Outcomes

3.1 Biodiversity, habitats, and ecosystem functions and services are understood, restored, and sustained.

3.2 Scientific understanding of ecosystem responses to the effects of climate change is improved.

3.3 Scientific understanding of ecosystem interaction and associated risks from contaminants advances.

Goal 4 **Land, water, and living resources are managed by applying science, tools, and services to sustain a resilient Chesapeake and coastal bays and their watersheds.**

Outcomes

4.1 The best available science is disseminated and integrated into ecosystem management decisions that consider and address historical inequities and sustain human communities.

4.2 Resource managers understand the risks, options, tradeoffs, and impacts of their decisions.

4.3 Inclusive collaborations with diverse people and organizations support planning, research, and innovative solutions to address coastal and watershed management needs, especially for vulnerable communities.

Focus Area: Sustainable Fisheries and Aquaculture

An in-depth research foundation is critical for achieving profitable aquaculture and sustainable fisheries in Maryland. Aquaculture, coupled with new techniques and tools in engineering and biotechnology, may expand the types of species produced and generate new consumer options, catalyzing economic development, job creation and a more diverse workforce. Improving species management processes and decisions, especially in response to changing environmental conditions, is essential for restoring and sustaining fisheries. Equally important is developing understanding of the needs of multiple audiences with differing

views and priorities to build support for effective ecosystem-based fisheries management strategies. Technologies to improve seafood products and enhance the industry's ability to deliver a safe and satisfying product are also important to ensure the economically sustainable use of Maryland's natural resources.

Goal 5 Fisheries and aquaculture supply food, jobs, and economic and cultural benefits.

Outcomes

5.1 Fisheries and aquaculture industries understand and use best available technologies and business practices for safe and sustainable seafood management and production.

5.2 Diversity of participants entering and retained in fisheries and aquaculture is increased.

5.3 Consumers understand the benefits of sustainably produced domestic seafood for human and environmental health.

Goal 6 Natural resources are sustainably managed to support fishing communities and industries, including commercial, recreational, and subsistence fisheries, and aquaculture.

Outcomes

6.1 Fisheries and aquaculture research improves the management and sustainability of natural resources.

6.2 Managers employ strategies that balance economic, community, cultural, and conservation goals and promote the diversity of people working in fisheries and aquaculture.

6.3 Resource managers and fishing and aquaculture communities have access to and share diverse knowledge and tools to increase their capability to adapt to changing resource management needs, including those driven by climate change.

Focus Area: Resilient Communities and Economies

The urgent need to adapt to the effects of climate change presents unprecedented challenges for communities and local governments throughout the Chesapeake and coastal bays and their watersheds. Changing climate requires comprehensive planning and adaptation across the region. Increased precipitation and accelerating rates of sea-level rise, both anticipated consequences of climate change, require well-informed communities who understand these issues and are engaged in strategic decision making to respond effectively. Further, inclusion of under-resourced communities historically excluded from information and community resiliency assistance must remain a priority for programming. As Maryland Sea Grant continues its important work

assisting communities and local governments with meeting their EPA Total Maximum Daily Load requirements to limit nutrient and sediment pollution, we are committed to working through the lens of climate change and social justice. It is imperative that we work collaboratively with all our constituents to improve understanding of both social and environmental drivers that can affect our ability to reach state and national goals in stormwater management and climate adaptation and mitigation. We must focus our attention on helping to build resilient coastal communities, with emphasis on communities that are facing the highest risks.

Goal 7 Coastal communities have the capability and resources to mitigate, prepare for, and adapt to extreme and chronic weather and coastal hazards, climate change, economic disruptions, and other threats to community health and well-being.

Outcomes

7.1 Communities improve their understanding of changing conditions and coastal hazards and their capability to implement mitigation and adaptation strategies.

7.2 Scientific knowledge of climate change impacts and hazard risks is co-produced and shared among decision-makers, diverse communities, and researchers.

7.3 Diverse citizens and partners collaborate to support mitigation and adaptation efforts built on knowledge from and responsive to the needs of all, especially the most vulnerable.

Goal 8 Water resources in the Chesapeake and coastal bays and their watersheds are enhanced, sustained, and protected to meet existing and emerging needs of the communities and economies that depend on them.

Outcomes

8.1 Communities work with knowledge networks to share and access science, data, tools, and services to plan for and adopt practices to address water quality and quantity issues.

8.2 Managers are better informed to act to address the risks historically disadvantaged communities face from water resource problems (e.g. water quality and quantity) worsened by climate change.

APPENDIX 1
NATIONAL SEA GRANT COLLEGE PROGRAM PERFORMANCE MEASURES AND METRICS

National Performance Measures by National Focus Areas

Environmental Literacy and Workforce Development (ELWD)

- Number of Sea Grant products that are used to advance environmental literacy and workforce development
- Number of people (youth and adults) engaged in Sea Grant-supported nonformal education programs
- Number of Sea Grant supported graduates who become employed in a job related to their degree within two years of graduation

Healthy Coastal Ecosystems (HCE)

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

Sustainable Fisheries and Aquaculture (SFA)

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

Resilient Communities and Economies (RCE)

- Number of communities that adopt/implement sustainable economic and environmental development practices and policies as a result of Sea Grant activities
- Annual number of communities that adopt/implement hazard resilience practices to prepare for and respond to/minimize coastal hazardous events

Cross Cutting National Focus Area Measures

- Number of Sea Grant tools, technologies, and information services that are used by our partners/customers to improve ecosystem-based management
- Economic and societal impacts and benefits derived from Sea Grant activities (market and non-market; jobs and businesses created or sustained; patents)

Cross Cutting National Performance Metrics

- Sea Grant staffing: Number of individuals and full-time equivalents (FTEs) by Sea Grant
- Core funding proposals: Number and origination of core funding pre- and full- proposals
- Number of volunteer hours
- Number of postsecondary students and degrees financially supported by Sea Grant in higher education programs (undergraduate, graduate)
- Number of P–12 students who participated in Sea Grant-supported formal education programs
- Number of P–12 students reached through Sea Grant-trained educators
- Number of educators who participated in Sea Grant-supported professional development programs
- Number of Sea Grant-sponsored/organized events
- Number of attendees at Sea Grant-sponsored/organized events
- Number of public or professional presentations
- Number of attendees at public or professional presentations
- Number of individuals certified or recertified in Hazard Analysis Critical Control Point (HACCP) as a result of Sea Grant activities
- Number of peer-reviewed publications produced by Sea Grant

APPENDIX 2
MARYLAND SEA GRANT STRATEGIC PLAN ALIGNMENT WITH NATIONAL GOALS AND FOCUS AREAS

NATIONAL PLAN GOALS	STATE PLAN GOALS (End State)	STATE PLAN OUTCOMES (Result/What is achieved)	STATE PLAN STRATEGIES (Actions/What we will do)
Environmental Literacy and Workforce Development (ELWD)			
A diverse, environmentally literate public participates in lifelong formal and nonformal learning opportunities.	A diverse, environmentally literate public participates in lifelong formal and nonformal learning opportunities.	Individuals from diverse backgrounds are retained in STEM fields and consider themselves environmentally literate and lifelong STEM learners. Educators, students, and lifelong learners are equipped with current information and innovative tools that meet or exceed relevant standards and practices. Community members use their knowledge to act on issues for personal and social resilience and adaptation to changing economic, environmental, and social conditions. Students from diverse backgrounds and needs are thoughtfully and intentionally supported in and have access to formal and experiential learning, research experiences, and career-readiness training.	Develop partnerships, programs, and associated materials to educate diverse audiences. Project-based learning introduces students to marine and environmental science and retains them in science, technology, engineering, and mathematics (STEM) disciplines. Support participatory decision making and collaborative learning to improve local decision making and community engagement. Support best practices to understand and implement effective pedagogy for diverse audiences. Conduct nonformal community learning events (adult education classes, after-school learning, community outreach events) to improve environmental literacy and inspire confidence in science. Training and certificate programs target underserved populations to become more environmentally literate. Expand use and accessibility of communications tools and platforms to educate and meet the information needs of diverse audiences.

NATIONAL PLAN GOALS	STATE PLAN GOALS (End State)	STATE PLAN OUTCOMES (Result/What is achieved)	STATE PLAN STRATEGIES (Actions/What we will do)
Environmental Literacy and Workforce Development (ELWD), cont.			
A diverse, skilled and environmentally literate workforce that is engaged and able to build prosperous lives and livelihoods through traditional and innovative careers.	A diverse, skilled, and environmentally literate workforce that is engaged and able to build prosperous lives and livelihoods through traditional and innovative careers.	Academic and professional opportunities, with particular emphasis on historically underserved people, improve environmental literacy skills, experiences, and the pursuit of advanced degrees in critical disciplines. Individuals graduate from programs and move on to serve as leaders in their fields. Employment in coastal and watershed communities expands and diversifies. A workforce able to adapt and thrive in changing environmental, social, and economic conditions.	Develop STEM instructional strategies and technologies that enhance local curriculum for K-12 teachers/administrators and nonformal education professionals. Emphasize activities to improve training and advance careers for historically underserved people. Engage with the public, private, and nonprofit sectors to understand their workforce needs and develop programming to meet them. Support partners in professional development or certification programs to strengthen decision-makers' knowledge. Use a diverse portfolio of communications tools (e.g., in-person learning, pre-recorded video series, social media) to reach a wide audience and ensure broad access to workforce training opportunities. Develop teacher professional development programs that integrate academic research and project-based learning and engage students in classroom and field activities. Develop, improve, and market undergraduate, graduate, and post-graduate fellowships and extend their reach to under-represented groups in coastal and marine sciences.

NATIONAL PLAN GOALS	STATE PLAN GOALS (End State)	STATE PLAN OUTCOMES (Result/What is achieved)	STATE PLAN STRATEGIES (Actions/What we will do)
Healthy Coastal Ecosystems (HCE)			
Coastal and Great Lakes habitats, ecosystems and the services they provide are protected, enhanced and/or restored	Watersheds and coastal ecosystems, habitats, and the services they provide are protected, enhanced, and/or restored.	Biodiversity, habitats, and ecosystem functions and services are understood, restored, and sustained. Scientific understanding of ecosystem responses to the effects of climate change is improved. Scientific understanding of ecosystem interaction and associated risks from contaminants advances.	Support research to understand how changing coastal, estuarine, and watershed conditions (e.g., temperature, salinity, precipitation, wind, waves, tidal flooding, nutrients, sediments, contaminants, sea-level rise, extreme events) affect biodiversity, habitats, and ecosystem function and services on multiple spatial and temporal scales. Support integrated social and natural science research to understand ecosystem responses to human-driven stressors (e.g., climate change, energy development, water quality, marine debris, contaminants, coastal development, restoration, and management actions).
Land, water, and living resources are managed by applying science, tools and services to sustain resilient coastal and Great Lakes ecosystems	Land, water, and living resources are managed by applying science, tools, and services to sustain a resilient Chesapeake and coastal bays and their watersheds	The best available science is disseminated and integrated into ecosystem management decisions that consider and address historical inequities and sustain human communities. Resource managers understand the risks, options, tradeoffs, and impacts of their decisions. Inclusive collaborations with diverse people and organizations support planning, research, and innovative solutions to address coastal and watershed management needs, especially for vulnerable communities.	Determine how restoration efforts affect or are affected by changes in coastal and estuarine conditions. Develop and assess restoration, conservation, expansion, and other resiliency practices and their effectiveness to prevent and/or reduce loading of nutrients, sediments, and other pollutants within the watershed. Support social, economic, and environmental research; synthesis; and statistical analysis to understand ecosystem change over time and to advance ecosystem-based management. Encourage the development of innovative approaches for sharing the best available science to foster collaborative decision making among diverse stakeholders.

NATIONAL PLAN GOALS	STATE PLAN GOALS (End State)	STATE PLAN OUTCOMES (Result/What is achieved)	STATE PLAN STRATEGIES (Actions/What we will do)
Sustainable Fisheries and Aquaculture (SFA)			
Domestic fisheries, aquaculture and other coastal and freshwater living resources supply food, jobs and economic and cultural benefits	Fisheries and aquaculture supply food, jobs and economic and cultural benefits.	Fisheries and aquaculture industries understand and use best available technologies and business practices for safe and sustainable seafood management and production. Diversity of participants entering and retained in fisheries and aquaculture is increased. Consumers understand the benefits of sustainably produced domestic seafood for human and environmental health.	Support research and develop technologies, strategies, and hands-on training in support of safe aquaculture and seafood production methods. Engage collaboratively with aquaculture practitioners to maintain awareness of pressing challenges. Develop and disseminate outreach materials to raise consumer awareness of the benefits of sustainable seafood. Facilitate connections among industry, academia, diverse audiences, and resource managers to develop collaborative solutions to current and anticipated future challenges. Provide knowledge and teach practices to increase economic viability of the aquaculture industry.
Natural resources are sustainably managed to support coastal communities and working waterfronts, including commercial, recreational, subsistence fisheries and aquaculture	Natural resources are sustainably managed to support fishing communities and industries, including commercial, recreational, and subsistence fisheries and aquaculture.	Fisheries and aquaculture research improves the management and sustainability of natural resources. Managers employ strategies that balance economic, community, cultural, and conservation goals and promote the diversity of people working in fisheries and aquaculture. Resource managers and fishing and aquaculture communities have access to and share diverse knowledge and tools to increase their capability to adapt to changing resource management needs, including those driven by climate change.	Support research on sustainable recreational and commercial fisheries and aquaculture and their effects on ecosystem function and restoration. Support natural and social science research on sustainable fisheries targets, economics, and ecosystem-based fisheries management. Support technology innovation, business development, and sustainable practices in fisheries and aquaculture. Use partnerships to advance workforce training for diverse learners to gain jobs in aquaculture and fishery-related careers. Support collaboration and communication outreach and products for developing stronger fisheries and aquaculture industries.

NATIONAL PLAN GOALS	STATE PLAN GOALS (End State)	STATE PLAN OUTCOMES (Result/What is achieved)	STATE PLAN STRATEGIES (Actions/What we will do)
Resilient Communities and Economies (RCE)			
Coastal and Great Lakes communities have the capability and resources to prepare for and adapt to extreme and chronic weather and coastal hazards, climate change, economic disruptions and other threats to community health and well-being	Coastal communities have the capability and resources to mitigate, prepare for, and adapt to extreme and chronic weather and coastal hazards, climate change, economic disruptions, and other threats to community health and well-being.	Communities improve their understanding of changing conditions and coastal hazards and their capability to implement mitigation and adaptive strategies. Scientific knowledge of climate change impacts and hazard risks is co-produced and shared among decision-makers, diverse communities, and researchers. Diverse citizens and partners collaborate to support mitigation and adaptation efforts built on knowledge from and responsive to the needs of all, especially the most vulnerable.	Support development of technologies and research-based strategies for sustainable and resilient communities, focusing on such topics as clean energy, shoreline erosion, coastal flooding, habitat loss, working waterfronts, and extreme events. Support co-produced community science to understand and help coastal communities become more resilient to the effects of climate change and extreme events. Use accessible climate information, green infrastructure, design, art, and other community conversations to help diverse and vulnerable groups become more sustainable and aware of ways to address climate change. Support environmental research and engagement in rural and urban communities, especially where resources may be limited and climate risks high. Develop tools, resources, and strategies to engage with diverse and vulnerable communities and decision makers regarding the risks from climate change and other hazards. Apply social science, collaborative planning, and other strategies to encourage behavior change toward more sustainable stormwater practices.

NATIONAL PLAN GOALS	STATE PLAN GOALS (End State)	STATE PLAN OUTCOMES (Result/What is achieved)	STATE PLAN STRATEGIES (Actions/What we will do)
Resilient Communities and Economies (RCE), cont.			
Water resources are enhanced, sustained and protected to meet existing and emerging needs of the communities and economies that depend on them	Water resources in the Chesapeake and coastal bays and their watersheds are enhanced, sustained, and protected to meet existing and emerging needs of the communities and economies that depend on them.	Communities work with knowledge networks to share and access science, data, tools, and services to plan for and adopt practices to address water quality and quantity issues. Managers are better informed to act to address the risks historically disadvantaged communities face from water resource problems (e.g., water quality and quantity) worsened by climate change.	Develop tools and support research to understand the socioeconomic value and ecological consequences of water resources management options. Advance understanding and management actions to address salt water intrusion in coastal communities. Engage diverse communities and decision makers on water quality and quantity issues, including septic systems and ground and surface waters (e.g., Total Maximum Daily Loads, Best Management Practices). Assist historically disadvantaged communities to address water quality and quantity risks associated with stormwater and coastal flooding. Assist communities, especially those underserved and under-resourced to improve their capacity to reduce sediments and nutrients in stormwater and advance their understanding of green infrastructure and other appropriate BMPs for water management. Support natural and social science research, including modeling, to understand the effects of landscape changes (e.g., wetland loss, inundation, saltwater intrusion, etc.) on ecosystems and communities. Support education and implementation assistance to private landowners and practitioners through partnerships, community groups, neighborhood site assessments, and assisting local governments with meeting pollution reduction goals.