

VISION, MISSION, VALUES, AND GOALS

VISION

Long Island Sound and its watershed have clean waters, healthy habitats, thriving wildlife, resilient coasts, and an engaged public.

MISSION

The Long Island Sound Partnership leads a collective effort to restore and care for the Sound and its watershed.

VALUES

The Partnership has adopted core values to guide its operation and activities.

1. Actionable Science: Support innovative and high-quality science to understand and care for the health of the Sound and its watershed. Make science accessible by a) respecting, valuing, and incorporating where appropriate local and Indigenous Knowledge and b) advancing the principles and practices of Open Science.

2. Respect and Trust: Operate in a way that fosters respect and trust among collaborators, communities, and individuals in decision-making and program implementation. Justly treat and meaningfully involve people regardless of income, race, color, national origin, Tribal affiliation, or disability in decision-making and other activities that affect human health and the environment.

3. Adaptive Management: Use science-informed processes and learning from collective experiences, including local and Indigenous Knowledge, to make implementation and management decisions. Include everyone in caring for the Sound and work to make resources accessible to all.

GOALS

Four goals translate the Vision into specific action statements.

1. Clean Waters and Healthy Watersheds (CWHW):

Restore and maintain water quality in Long Island Sound and its watershed.

2. Thriving Habitats and Abundant Wildlife (THAW):

Restore and protect the health and resilience of habitats and wildlife in Long Island Sound and its ecosystems.

3. Sustainable and Resilient Communities (SRC):

Empower Long Island Sound communities to plan for and respond to environmental challenges in ways that prioritize well-being for all.

4. Informed and Engaged Public (IEP): Inspire and empower the public to appreciate, value, and protect Long Island Sound and the waters that flow into the Sound.

OBJECTIVES AND ACTIONS

The 2025 CCMP identifies objectives and actions to support the attainment of each goal. Objectives are aspirational outcomes to be achieved by 2035 (unless stated otherwise). The objectives are ambitious goalposts to drive collective action. Each objective has one or more defined primary measures of success structured to be Specific, Measurable, Achievable, Relevant, and Time-bound (a framework known as SMART). The SMART framework helps define reasonable outcomes and ensures that progress can be clearly and precisely tracked over time. Each objective also identifies indicators that can provide supporting data and insight into the progress made. Explanations of and rationale for each objective, along with full descriptions of how each primary measure of success follows the SMART structure, are included in Appendix B.

Actions are broad, strategic activities to be taken in the next five years (2025-2029) to help achieve an objective. The actions, along with a brief description of the types of activities that contribute to the action, are listed under a specific objective but may also support the attainment of other objectives. Full descriptions of and rationale for each action and supporting activities are included in Appendix B. The crosscutting connections of actions contributing to the achievement of multiple objectives are shown in Appendix C. The Partnership will review the actions in five years and update them as needed to allow for adaptive management and inclusion of emerging scientific and technological advances.



CCMP GOALS

This section highlights the objectives and actions required to meet the goals of the CCMP. It starts with a two-page summary, "Our Plan at a Glance."

A WILLET ALONG THE ROCKS at Hammonasset Beach State Park, a Long Island Sound Stewardship Site, in Madison, CT.
Photo by Bob Gundersen.

CLEAN WATERS AND HEALTHY WATERSHEDS

OBJECTIVES	ACTIONS
Nutrients: Reduce nutrients across the watershed to restore and protect water quality and mitigate impacts on ecosystem health in LIS and its embayments.	<ul style="list-style-type: none"> Implement nutrient reduction actions across the LIS watershed focusing on the most impactful sources. Support monitoring, modeling, and research, to improve understanding of source contributions, their impacts to ecosystem health, and the benefits of nutrient reduction actions. Collaborate with stakeholders and partners to develop plans, tools, and strategies that support nutrient reduction actions.
Watershed Health: Improve the ecosystem health of LIS and its watershed through protection and positive land use practices.	<ul style="list-style-type: none"> Preserve, restore, and steward natural landscapes and the ecosystem services they provide through land conservation and protection efforts beyond the coastal boundary. Implement nature-based solutions that improve and maintain water quality and ecosystem health.
Pathogens: Reduce pathogens and increase monitoring to protect water quality and human health, ensuring safe recreational and commercial use.	<ul style="list-style-type: none"> Evaluate and improve wastewater and stormwater infrastructure, and support upgrades or sewer connections of inadequate onsite wastewater treatment systems in the LIS coastal watershed boundary. Expand sampling and source tracking and encourage advancements in methodology.
Toxic Contaminants: Research, monitor, assess, and reduce emerging and legacy toxic contaminants to mitigate impacts on water and habitat quality in LIS.	<ul style="list-style-type: none"> Identify existing and emerging contaminants of concern and support mitigation efforts. Continue collection and evaluation of contaminant data. Encourage proactive research and assessment of emerging contaminants.
Marine Debris: Achieve trash free waters by increasing clean-up efforts and preventing marine debris from entering LIS.	<ul style="list-style-type: none"> Support research and monitoring to better understand the extent, sources, and impacts of debris on the ecosystem. Advance and implement interception technologies and tools that remove debris and support education and outreach. Support the removal of marine debris in LIS and coastal watersheds. Inform and support the development and implementation of municipal and state marine debris plans and policies to reduce, prevent, and intercept debris.

THRIVING HABITATS AND ABUNDANT WILDLIFE

OBJECTIVES	ACTIONS
Coastal Habitat: Protect and enhance the extent, health, and wildlife benefits of coastal habitats through restorative measures to combat deterioration and loss.	<ul style="list-style-type: none"> Restore coastal habitat through established restoration techniques or help validate and communicate innovative approaches. Install living shorelines for coastal habitat restoration and protection, including the conversion of existing hard-armored shorelines to a more natural condition. Survey, research, and monitor changes in extent and abundance of coastal habitat types, focusing on tidal wetlands and seagrass.
Offshore Habitat: Protect and enhance the health of offshore habitat and their associated species.	<ul style="list-style-type: none"> Promote marine spatial planning that balances human uses and protects ecosystem functions of offshore habitat and species. Map the seafloor to characterize underwater habitats and use that data to enhance coastal and marine spatial planning and designation of protected areas and buffer zones. Steward and restore offshore habitat, supporting the development and implementation of action plans and programs that incorporate community science, engagement, and participation.
Habitat Connectivity: Increase connectivity of coastal habitat to enhance biodiversity and support migratory pathways.	<ul style="list-style-type: none"> Use remote sensing, mapping tools, modeling, and field verification to restore and protect habitat patches and river miles to enhance connectivity. Remove stream barriers to restore fish and wildlife migration, sediment transport, and other stream functions. Collaborate regionally to streamline permitting pathways to strengthen regional capacity for habitat restoration.
Conserved Open Space: Conserve open space through land acquisition while maintaining and enhancing the total area of protected land.	<ul style="list-style-type: none"> Protect coastal habitat from development through the implementation of land conservation plans that identify priorities for conservation, management, and investment. Increase access and enhance sustainable stewardship of conserved lands particularly for distressed communities.

SUSTAINABLE AND RESILIENT COMMUNITIES

OBJECTIVES	ACTIONS
Informed Decision-Makers: Grow the # of municipal, nonprofit, and community leaders receiving training and support to increase capacity for adaptation to environmental challenges.	<ul style="list-style-type: none"> Deliver or facilitate sustainability and resilience training programs responsive to community needs. Support community-centered research, monitoring, or development of tools to assess the effects of extreme weather events and advance resilience.
Community-Driven Resilience: Increase the # of municipalities that identify key resilience priorities through local or regional community-driven planning processes.	<ul style="list-style-type: none"> Develop resilience plans, including the incorporation of resiliency strategies into existing municipal, regional, or watershed plans. Coordinate across municipal boundaries to advance collective resilience priorities. Empower and increase engagement of community members and groups in local and regional resilience planning and decision-making.
Resilience Initiative Implementation: Implement initiatives to improve community resilience to flooding and other environmental challenges.	<ul style="list-style-type: none"> Increase community capacity to implement and manage sustainable and resilient initiatives. Develop and adopt regulations, codes, and ordinances that increase resilience. Implement nature-based solutions that address flooding and other climate impacts. Implement infrastructure projects that increase community sustainability and resilience to flooding and other climate impacts. Monitor, maintain, and adaptively manage resilience projects to ensure their long-term success.

INFORMED AND ENGAGED PUBLIC

OBJECTIVES	ACTIONS
Public Access and Sense of Belonging: Increase and improve opportunities for everyone to access and appreciate LIS and the waters that flow into the Sound.	<ul style="list-style-type: none"> Collaborate with local governments, environmental groups, and community leaders to increase and improve public access and sense of belonging. Develop and implement projects that increase the number and quality of public access sites. Promote sense of belonging at public access sites through events, festivals, celebrations, materials, and programming.
Education and Environmental Literacy: Increase, improve, and expand the environmental literacy of people interacting with the LIS watershed.	<ul style="list-style-type: none"> Increase collaboration among environmental education partners to elevate existing and initiate new environmental education programs. Host and promote opportunities to participate in LIS-based education programs. Develop engaging, multilingual, and innovative educational materials, tools, and activities. Support efforts to assess the public's understanding of LIS and its watershed.
Fostering Stewardship and Sustainable Behaviors: Increase public engagement in environmental practices that protect and conserve LIS and its watershed.	<ul style="list-style-type: none"> Involve the public in monitoring, restoration, and conservation of LIS and its ecosystems through volunteerism, participatory science, and community-led action. Investigate the relationship between the public and the LIS ecosystem through social science research. Develop campaigns and share messages to encourage residents to engage in environmentally friendly practices. Promote environmentally friendly behaviors through outreach to beachgoers, boaters, anglers, and other Sound users. Provide information, programming, resources, and incentives that enable local environmental groups, municipalities, schools, and others to teach and promote sustainable community practices.

CLEAN WATERS AND HEALTHY WATERSHEDS

Restore and maintain water quality in Long Island Sound and its watershed.

INTRODUCTION

Clean water is an essential component to achieving the Partnership's vision and is crucial for a healthy Long Island Sound. It supports public health, recreation, thriving fisheries, and productive habitats. The Sound's condition is influenced by the quality of the water from the entire watershed. The connection between the land and water, and between sustainable upland communities and a healthy Long Island Sound, forms the basis of the Clean Waters and Healthy Watersheds goal.

In the 1990s, New York State Department of Environmental Conservation (NYSDEC), Connecticut Department of Energy and Environmental Protection (CT DEEP), and the EPA recognized the need to take action to improve water quality and worked to develop *A Total Maximum Daily Load to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound* (CT DEEP and NYSDEC, 2000), which set allocations for nitrogen entering Long Island Sound from throughout the watershed. Following approval of the Total Maximum Daily Load (TMDL), New York and Connecticut incorporated nitrogen limits into the permits for wastewater treatment plant discharges in the watershed. This has yielded dramatic results. Since 2017, the wastewater treatment plants have been below the allocations set in the TMDL for reducing nitrogen pollution. Through infrastructure investments of more than \$2.5 billion dollars to improve wastewater treatment, New York and Connecticut cut more than 47 million pounds of nitrogen annually from point sources alone. Additionally, both states have worked to achieve nutrient reductions from nonpoint and stormwater sources. More recently, the EPA has added nitrogen limits to wastewater treatment plant discharges in the

Massachusetts portion of the watershed. The cumulative decline in nitrogen pollution to the Sound has improved water quality, decreasing the five-year rolling average in the maximum area of hypoxia—or low dissolved oxygen—waters by more than half compared to the pre-2000 average.

While Long Island Sound's water is getting cleaner, the Sound still suffers from hypoxic "dead zones," beach closures, and other effects of contamination that keep Long Island Sound's open water and embayments from meeting water quality goals. Addressing these environmental conditions will require integrated approaches to reduce polluted surface water and groundwater, evaluate contaminants of emerging concern, and create resilient infrastructure. There is a continued need for land use planning that protects water resources to ensure the sustainable use of the Sound's resources. Extreme weather events and a changing climate can exacerbate water quality issues (see Appendix D). Additional emphasis is needed on assessing and improving water and habitat quality of the Sound's open waters and its harbors and bays, which many people use for recreation and enjoyment.

The objectives under this goal address the factors that most impact Long Island Sound: nutrient pollution, pathogen contamination, toxic contaminants, marine debris, and land-use practices. Each objective is followed by actions and supporting activities to be taken in the next five years (2025-2029) to help achieve it. Refer to Appendix B for technical explanations of the objectives and actions.

Objective 1: Nutrients

CWHW 1: Reduce nutrients across the watershed to restore and protect water quality and mitigate impacts on ecosystem health in Long Island Sound and its embayments.

The primary measures of success are to: implement nutrient reduction actions established under Suffolk and Nassau counties' nine-element watershed-based plans; establish nutrient reduction or protection targets for six priority embayments through Connecticut's *Second-Generation Nitrogen Strategy*; and develop additional nutrient reduction and protection plans across the watershed to reduce impairments in Long Island Sound, including open-water hypoxia, and its embayments. Benthic conditions, hypoxia extent, duration and volume, water clarity, and nitrogen loading from wastewater treatment plants and rivers can provide indicators of progress in meeting the overall objective.

NYSDEC's nine-element watershed-based plans and CT DEEP's *Second-Generation Nitrogen Strategy* establish actions designed to reduce nutrient loading to support water quality and ecosystem health of Long Island Sound and its embayments. The nine-element watershed-based plans for both Suffolk and Nassau counties call for the removal and upgrade of substandard onsite wastewater treatment systems (OWTS), including connecting them to public sewers. Reduction of nutrients will be accounted for by tracking the number of OWTS that are removed or upgraded. CT DEEP is developing embayment specific nutrient reduction and protection targets and progress towards this measure will be tracked by the number of embayments with targets. Efforts to attain and maintain nitrogen loading targets supporting water quality standards under future conditions in Long Island Sound will continue, including assessments of monitoring data and regional water quality modeling tools. Other efforts, such as the Long Island Sound Futures Fund and state-managed 319 nonpoint source programs provide funding for the development of nutrient reduction plans and implementation actions that also work to support the water quality and ecosystem health of Long Island Sound and its embayments. Therefore, nutrient removal projects and the number of plans developed will be tracked as an additional measure of success for the nutrients objective.

ACTIONS

CWHW 1-1: Implement nutrient reduction actions across the Long Island Sound watershed with an emphasis on the greatest contributing sources and their impacts on Long Island Sound and its embayments.

Activities under this action include upgrading wastewater treatment plants; improving wastewater and stormwater infrastructure, abating combined and sanitary sewer overflows (CSOs and SSOs) in support of approved long-term control plans and municipal separate stormwater sewer system permits; replacing traditional OWTS with enhanced onsite wastewater treatment systems or connections to centralized treatment systems; and supporting nutrient bioextraction projects.

CWHW 1-2: Support monitoring, modeling, and research – with appropriate data management, storage, and accessibility requirements – to improve understanding of source contributions, their impacts to ecosystem health, and the relative performance and benefits of nutrient reduction actions.

Activities under this action include monitoring and researching nutrient sources and impacts, as well as developing multiple types of models and data management systems.

CWHW 1-3: Collaborate with stakeholders and partners to develop plans, tools, and strategies that support nutrient reduction actions to improve overall ecosystem management.

Activities under this action include developing additional watershed-based plans, policies, and

strategies that alleviate barriers and expedite implementation, and creating other tools to support nutrient reduction actions.

Other actions that support objective: CWHW 2-1, CWHW 2-2, CWHW 3-1, THAW 3-2, THAW 4-2, SRC 3-1, SRC 3-2, SRC 3-3, SRC 3-4, IEP 3-1, IEP 3-3

Objective 2: Watershed Health

CWHW 2: Improve the ecosystem health of Long Island Sound and its watershed through protection and positive land use practices.

The primary measures of success are to establish and maintain a 100-foot or wider riparian buffer across 75 percent of the waterways and in 90 percent of the subbasins, and achieve and maintain the permanent protection of 35 percent of the Long Island Sound watershed by 2035. Impervious cover and changes in forest cover can provide indicators of progress in meeting the overall objective.

Protecting land in key areas prevents habitat loss, reduces pollution from stormwater runoff, and safeguards ecosystems that serve as natural buffers against climate impacts. The Partnership will prioritize areas that safeguard water quality, support biodiversity, enhance climate resilience, and provide access to green spaces for all communities. These targets build upon regional initiatives like “30 by 30,” which aim to protect 30 percent of land by 2030 while promoting ecological and community health. Additionally establishing 100-foot or wider riparian buffers aid in filtering pollutants, stabilizing streambanks, and reducing runoff.

ACTIONS

CWHW 2-1: Preserve, restore, and steward natural landscapes and the ecosystem services they provide through land conservation and protection efforts beyond the coastal boundary.

Activities under this action include acquiring land, restoring habitat, implementing stewardship programs, collecting GIS data, and developing models to protect and enhance ecosystem services.

CWHW 2-2: Implement nature-based solutions and other practices that improve and maintain water quality and ecosystem health.

Activities under this action include installing green infrastructure, establishing riparian buffers, reducing impervious surfaces, restoring wetlands, enhancing urban forestry, and collecting GIS data to improve water quality and ecosystem health.

Other actions that support objective: THAW 4-2, SRC 3-1, SRC 3-3, IEP 3-3

Objective 3: Pathogens

CWHW 3: Reduce pathogens and increase monitoring to protect water quality and human health, ensuring safe recreational and commercial use.

The primary measures of success are, through stormwater and wastewater infrastructure improvement projects, to: complete 11,500 OWTS replacements, upgrades, and removals; achieve a five-year rolling average of 85 percent of beaches graded B- and above based on beach data from Sound Health Explorer; increase the number of samples collected by 10 percent; and increase the spatial coverage of monitoring relative to a 2023 baseline. Approved shellfish areas and public beach closures can provide indicators of progress in meeting the overall objective.

The target of 11,500 OWTS upgrades was determined by combining targets established under Suffolk and Nassau counties' NYSDEC approved nine element watershed-based plans, and CT DEEP's 10-year target for OWTS upgrades. The Sound Health Explorer target was developed using the five-year rolling averages of the percentage of beaches graded "A" or "B" (B- and above) from 2003-2023. The five-year rolling average of beaches graded B- and above for 2003-2023 is 75.5 percent, while 2023 reported 77.5 percent. It was determined that a five-year rolling average of 85 percent of beaches graded B- and above is an achievable target based on these long-term trends and would improve safe access to beaches. A 10 percent increase in sampling was determined using pathogen monitoring data from the Interstate Environmental Commission and Save the Sound. In 2023, 983 samples were collected across 93 stations in Long Island Sound. It was determined that a 10 percent increase was achievable given the programs' capacity and would help fill geographic data gaps.

ACTIONS

CWHW 3-1: Evaluate and improve wastewater and stormwater infrastructure, and support replacement, upgrade, or sewer connections of inadequate OWTS located in critical or strategic watersheds.

Activities under this action include: assessing wastewater and stormwater infrastructure; implementing infrastructure improvements; abating combined and sanitary sewer overflows in support of approved long-term control plans and municipal separate stormwater sewer system permits; and replacing traditional OWTS with enhanced OWTS or connections to centralized treatment systems.

CWHW 3-2: Expand the spatial and temporal coverage of sampling and source tracking and encourage advancements in methodology.

Activities under this action include expanding spatial and temporal coverage of pathogen monitoring and microbial source tracking, integrating data, and developing models.

Other actions that support objective: CWHW 1-1, THAW 4-2, SRC 3-1, SRC 3-3, SRC 3-4, IEP 3-1, IEP 3-3

Objective 4: Toxic Contaminants

CWHW 4: Research, monitor, assess, and support mitigation efforts on emerging and legacy toxic contaminants to reduce impacts on water and habitat quality in Long Island Sound.

The primary measure of success is to increase the area of sediment in good condition in Long Island Sound by 20 percent from the 2005 baseline by 2035. The area of sediment in good condition in Long Island Sound from the 2005 National Coastal Condition Assessment (NCCA) was 53 percent. This goal, if achieved, would raise the proportion of sediment in good condition from 53 percent to 63.6 percent, which is both ecologically significant and technically feasible based on past trends and ongoing management efforts.

ACTIONS

CWHW 4-1: Identify existing and emerging contaminants of concern and support mitigation efforts as warranted.

Activities under this action include synthesizing data, conducting gap analyses, modeling impacts, developing an action agenda, and identifying potential mitigation approaches.

CWHW 4-2: Continue collection and evaluation of contaminant data (e.g., NCCA) for Long Island Sound and its embayments.

Activities under this action include collecting and evaluating data and developing assessment tools using indicator species or fish tissue.

CWHW 4-3: Encourage proactive research and assessment of emerging contaminants including but not limited to per- and polyfluoroalkyl substances (PFAS), 1,4-dioxane, and trifluoroacetic acid.

Activities under this action include supporting research to evaluate contaminants that are lesser known.

Other actions that support objective: IEP 3-3

Objective 5: Marine Debris

CWHW 5: Achieve trash free waters by increasing clean-up efforts and preventing marine debris from entering Long Island Sound.

The primary measure of success is to decrease the mass of marine debris collected per mile during the fall International Coastal Cleanup by 10 percent from the 2022 five-year rolling average baseline of 174 pounds per mile. Identification of marine debris by category and number of volunteers at coastal cleanups can provide indicators of progress in meeting the overall objective.

Data from the International Coastal Cleanup held every fall is used because the Partnership can reliably obtain this information annually. The database includes type and weight of debris collected, distance covered, and number of bags filled. Improved frameworks to track marine debris reductions for Long Island Sound will be evaluated and established as needed within a five-year timeline.

ACTIONS

CWHW 5-1: Support research and monitoring efforts that aim to increase understanding of the extent and sources of marine debris and its impact on the ecosystem.

Activities under this action include identifying marine debris hot spots and contributing sources, and developing a framework to track reductions in marine debris abundance over time.

CWHW 5-2: Promote the advancement and implementation of interception technologies, tools, receptacle bins, and capture devices that remove debris, while supporting education and outreach across the Long Island Sound watershed.

Activities under this action include preventing and removing marine debris from upstream sources in the Long Island Sound watershed.

CWHW 5-3: Support the removal of marine debris located within the coastal boundary and Long Island Sound.

Activities under this action include supporting cleanup efforts and removing derelict fishing gear and large-scale debris within the coastal watershed.

CWHW 5-4: Inform and support the development and implementation of new local and state policies, and management plans aimed at source reduction, prevention, and interception practices as identified by available marine debris collection data.

Activities under this action include collecting data to inform decision-making (e.g., management and policies) related to specific marine debris sources.

Other actions that support objective: THAW 2-3, THAW 4-2, IEP 3-1, IEP 3-3, IEP 3-4

THRIVING HABITATS AND ABUNDANT WILDLIFE

Restore and protect the health and resilience of habitats and wildlife in Long Island Sound and its ecosystems.

INTRODUCTION

The habitats of the Long Island Sound watershed support diverse populations of both aquatic and terrestrial wildlife and other living resources, offer recreational opportunities, and function as an environmental infrastructure that provides services and benefits to the region. For hundreds of years, humans have greatly relied on these habitats and the ecosystem services they provide to sustain livelihoods, fuel local economies, and enhance overall quality of life. Since 1994, the Partnership has recognized the importance of restoring and protecting habitats in the Long Island Sound watershed. In fact, since 2014, the Partnership has restored 681 acres of coastal habitat, reconnected 129 river miles, and protected 5,423 acres of open space. The Thriving Habitats and Abundant Wildlife goal is fundamental to achieving the Partnership's vision through restoring and protecting the health and resilience of habitats and wildlife in Long Island Sound and its ecosystems.

Being an urbanized estuary, Long Island Sound habitats face multiple stressors including nutrient pollution, land development, and extreme weather events and a changing climate. While the Partnership has successfully restored and protected critical habitats, it is crucial to continue this work while incorporating innovative techniques and adaptive management to increase resilience to extreme weather events and a changing climate (see Appendix D). Without habitat restoration, protection, and management, Long Island Sound habitats and wildlife, and the ecosystem services they support, will be significantly diminished.

The objectives under this goal highlight four areas: coastal habitat, offshore habitat, habitat connectivity,

Coastal habitats targeted for restoration and enhancement to sustain living resources and ecosystem services: Beaches and Dunes, Cliffs and Bluffs, Estuarine Embayments, Coastal and Island Forests, Freshwater Wetlands, Coastal Grasslands, Intertidal Flats, Rocky Intertidal Zones, Riverine Migratory Corridors, Submerged Aquatic Vegetation Beds, Shellfish Reefs, and Tidal Wetlands.

and conserved open space. Each objective is followed by actions and supporting activities to be taken in the next five years (2025-2029) to help achieve it. Overall, the plan aims to continue habitat restoration and protection, prioritize research, monitoring, and modeling to better identify priority areas, explore innovative techniques and tools to combat unique stressors, enhance existing restored and protected areas through stewardship and management, and promote regional collaboration and communication. Additionally, the Partnership is prioritizing habitat restoration and protection efforts that are broadly shared across communities. Changes in federal, state, and local regulatory authorities may influence the approaches for protection and restoration work, such as re-prioritization of issues or ecosystems, but the Partnership will adapt to any changes to ensure objectives and actions are met. Refer to Appendix B for technical explanations of the objectives and actions that will guide the Partnership to sustain a healthy, productive, and resilient Long Island Sound benefiting all inhabitants.

Objective 1: Coastal Habitat

THAW 1: Protect, enhance, and assess the extent and health of coastal habitats and their associated wildlife through restorative measures and monitoring to combat deterioration and loss.

The primary measure of success is to restore 1,000 acres of coastal habitat in the coastal boundary of Long Island Sound. Of the 1,000 acres to be restored, 40 percent will be in areas lacking in natural habitat to ensure that benefits of restoration can be enjoyed by more communities. The measure is based on financial resources, institutional capacity to plan, permit, and restore habitat, and previous program achievements. Coastal habitat extent, embayment water clarity, shorebird counts, and horseshoe crab counts can provide indicators of progress in meeting the overall objective.

ACTIONS

THAW 1-1: Restore coastal habitat by supporting projects that implement established restoration techniques or help validate innovative techniques and include broad collaboration and communication.

Activities under this action include supporting projects to ultimately restore habitat and thereby protect wildlife and enhance ecosystem services.

THAW 1-2: Promote the installation of living shoreline methods for coastal habitat restoration and protection, including the conversion of existing hard-armored shorelines to a more natural condition.

Activities under this action include enhancing communication and collaboration with partners, decision-makers, and the public to encourage broader use of living shorelines.

THAW 1-3: Survey, research, and monitor changes and associated causes in extent and abundance of coastal habitat types and their associated wildlife with focus on tidal wetlands and seagrass.

Activities under this action include increasing the level of detail and accuracy of mapping the extent and monitoring the health of tidal marsh and seagrass habitats and their wildlife to mitigate stressor impacts.

Other actions that support objective: CWHW 1-2, CWHW 5-1, CWHW 5-3, THAW 3-1, THAW 3-2, THAW 3-3, THAW 4-2, SRC 1-1, SRC 1-2, SRC 3-1, SRC 3-2, SRC 3-3, SRC 3-4, SRC 3-5, IEP 3-1, IEP 3-4

Objective 2: Offshore Habitat

THAW 2: Protect and enhance the health of offshore habitats and their associated species.

The primary measure of success is to support and implement 25 restoration and management projects focused on seafloor habitat mapping, data collection, and species assessments. The measure is based on the goals in the Long Island Sound Seafloor Habitat Mapping Initiative, which aims to complete mapping of the entire seafloor to better understand the ecological characterization, biodiversity, and threats (e.g., invasives and adverse impacts from electric transmission cable placement). Fragile habitat extent (e.g., sponge, cold water corals), fish abundances (e.g., forage fish, finfish, and game fish), and invertebrate abundance (e.g., lobsters) can provide indicators of progress in meeting the overall objective.

ACTIONS

THAW 2-1: Promote science-based marine spatial planning that balances human use of the Sound and protects ecosystem functions of offshore habitat and species while considering the existing natural, social, cultural, historic, and economic characteristics of Long Island Sound.

Activities under this action include supporting studies to protect fragile benthic habitat as well as pelagic and demersal wildlife, and using data to inform decision-makers to enhance conservation efforts.

THAW 2-2: Support the Long Island Sound Seafloor Habitat Mapping Initiative and apply the collected data to refine and expand upon other initiatives supporting coastal and marine spatial planning and designation of protected areas and buffer zones.

Activities under this action include completing seafloor mapping, initiating monitoring to document changes to fragile habitats and their communities, and using data to support planning and decision-making.

THAW 2-3: Promote stewardship and restoration of offshore habitat in the Sound by supporting the development and implementation of action plans and programs that incorporate meaningful community science, engagement, and participation.

Activities under this action include supporting action plans and programs, enhancing communication and collaboration, and advancing innovative restoration approaches.

Other actions that support objective: CWHW 5-1

Objective 3: Habitat Connectivity

THAW 3: Increase connectivity of coastal habitat to enhance biodiversity and support migratory pathways.

The primary measures of success are to restore or protect 100 habitat patches and reconnect 175 miles of riverine migratory corridors in the Connecticut and New York portions of the watershed. Of the 175 additional miles of riverine migratory corridors, 50 percent of the miles will occur in locations where communities have not typically benefited from habitat connectivity projects. These measures are based on financial resources, institutional capacity to plan, permit, and restore habitat, and previous program achievements. Barrier removals and the number of anadromous fish in riverine migratory corridors can provide indicators of progress in meeting the overall objective.

ACTIONS

THAW 3-1: Implement remote sensing, mapping tools, modeling, and field verification to target restoration and protection of habitat patches and river miles to maintain and enhance connectivity.

Activities under this action include identifying high priority sites for restoration, monitoring stressor impacts to habitat and their wildlife, and utilizing models, assessments, and tools to inform planning efforts.

THAW 3-2: Complete stream barrier removal projects (i.e., dams or culverts) that result in full restoration of fish and wildlife migration, sediment transport, and other stream functions.

Activities under this action include fully removing and addressing stream barriers to protect wildlife and enhance ecosystem services provided by riverine systems.

THAW 3-3: Promote regional collaborations to support development of streamlined permitting pathways to build regional capacity for habitat restoration.

Activities under this action include increasing collaboration and communication specifically to develop streamlined pathways for permitting, sharing best management practices, and working more efficiently to accomplish restoration goals.

Other actions that support objective: CWHW 2-1, THAW 1-1, THAW 1-2, THAW 1-3, THAW 4-1, THAW 4-2, SRC 1-2, SRC 3-1, SRC 3-2, SRC 3-4, SRC 3-5

Objective 4: Conserved Open Space

THAW 4: Conserve open space through land acquisition while maintaining and enhancing the total area of protected land.

The primary measure of success is to conserve 5,000 acres of open space in the coastal boundary of Long Island Sound. Of the 5,000 acres to be conserved, at least 40 percent will be in areas where communities have not typically benefited from conservation projects. The measure is based on financial resources, institutional capacity to plan, permit, and restore habitat, and previous program achievements. Impervious cover, changes in forest cover, and watershed population can provide indicators of progress in meeting the overall objective.

ACTIONS

THAW 4-1: Protect high-priority coastal habitat from development through implementation of land conservation plans that identify priorities for conservation, management, and investment.

Activities under this action include minimizing impacts from land development, and utilizing tools, assessments, and existing protection plans to assist in acquisitions and conservation.

THAW 4-2: Increase access and enhance sustainable stewardship of conserved lands particularly for distressed communities.

Activities under this action include supporting stewardship activities, increasing access and use, and ultimately connecting the public to conserved land and its resources.

Other actions that support objective: SRC 3-2, IEP 1-1, IEP 1-2, IEP 1-3, IEP 2-2, IEP 3-1

SUSTAINABLE AND RESILIENT COMMUNITIES

Empower Long Island Sound communities to plan for and respond to environmental challenges in ways that prioritize well-being for all.

INTRODUCTION

The coastal communities along Long Island Sound in Connecticut and New York are home to more than four million people. Local government decisions affecting land use planning and development, alongside impacts from a changing climate, affect the health of the Sound and its watershed, which is tied closely to the health of local economies and influences the overall quality of life for Sound communities. The Sustainable and Resilient Communities goal is key to achieving the Partnership's vision for resilient coasts by empowering communities to plan for and respond to environmental challenges in ways that prioritize well-being for all.

Long Island Sound communities are already experiencing extreme weather events and a changing climate, including flooding caused by heavier rainfall, more intense storms, and rising sea levels. Impacts can also include increased water pollution that limits the use of the Sound, erosion that degrades habitat, and changes in species that disrupt ecosystems (see Appendix D).

These issues are complicated and costly for communities to manage because of the impacts on people, infrastructure,

and the environment. In *A Regional Needs Assessment to Help Build a Sustainable and Resilient Long Island Sound* (LISS, 2023), communities identified similar challenges to improving their sustainability and resilience to extreme weather events and a changing climate. These challenges include limited capacity and technical expertise to advance projects, ineffective coordination across levels of government, inadequate support of communities, and difficulty accessing project funding.

The objectives highlighted under this goal target three critical areas of need: increasing the capacity of decision-makers to advance initiatives; supporting resilience planning that reflects community priorities; and encouraging the implementation of projects that help communities adapt to flooding and other climate impacts. Each objective is followed by actions and supporting activities to be taken in the next five years (2025-2029) to help achieve it. Refer to Appendix B for technical explanations of the objectives and actions. A coordinated response, as outlined under this goal, will advance the resilience of Long Island Sound communities and set the stage for sustainability in the future.

Objective 1: Informed Decision-Makers

SRC 1: Increase the number of government officials, practitioners, and community leaders receiving training and support to increase their capacity to adapt to environmental challenges.

The primary measure of success is to engage 100 new decision-makers through Partnership trainings and resources every year. The total number of government officials, practitioners, and community leaders engaged can provide an indicator of progress in meeting the overall objective. Since 2022, more than 800 decision-makers (i.e., government officials, practitioners, and community leaders that influence or make policy decisions) have participated in Long Island Sound training and educational programs developed in response to findings from the 2023 needs assessment. Tracking the number of new decision-makers participating each year will measure the continued reach of training programs that build capacity, provide technical guidance, and lay the foundation for a better-coordinated regional response to extreme weather events, a changing climate, and other environmental challenges.

ACTIONS

SRC 1-1: Develop, deliver, and facilitate training programs relevant and responsive to community needs that assist with sustainability and resilience.

Activities under this action include conducting training programs such as webinars, in-person workshops, and field trips on a variety of topics, such as resilience planning basics, accessing funding, using technical tools, updating municipal codes, and sharing case studies and best practices.

SRC 1-2: Support community-centered research, monitoring, and development of tools to assess the risks from extreme weather events and a changing climate and advance resilience.

Activities under this action include developing new user-friendly tools, improving existing tools to increase accessibility, and conducting research or monitoring that will help communities understand, plan, and respond to environmental challenges. All activities should include community involvement to ensure their relevance.

Other actions that support objective: THAW 1-3, THAW 2-1, THAW 2-2, THAW 3-1, SRC 2-1, SRC 3-5, IEP 1-1, IEP 3-5

Objective 2: Community-Driven Resilience Planning

SRC 2: Increase the number of municipalities that identify key resilience priorities through local or regional community-driven planning processes.

The primary measure of success is that all 135 municipalities within the Partnership coastal boundary identify key resilience priorities. Twenty-eight of the 135 municipalities within the Long Island Sound coastal boundary have updated resilience plans or priorities as of January 2023. Plan development should prioritize vulnerable communities and ensure that stakeholders are convened and included in each step. Resilience plans or priorities should be reviewed and updated at least every 10 years. While resilience planning is encouraged through the entire watershed, this objective will only track plans throughout the coastal boundary due to capacity reasons.

ACTIONS

SRC 2-1: Develop climate resilience plans and strategies into existing municipal, regional, and watershed plans.

Activities under this action include updating existing or creating new climate vulnerability assessment and adaptation plans; identifying resilience priorities in other municipal, regional, or watershed

plans; and supporting the development of climate resilience plans through incentive programs or technical assistance. Hazard mitigation plans and other plans or priorities that are older than 10 years old do not count toward this action.

SRC 2-2: Coordinate across municipal boundaries to advance collective resilience priorities.

Activities under this action include providing programming, incentives, and support to encourage partnerships between neighboring communities and levels of government to align priorities and develop or advance implementation of sustainability and resilience plans.

SRC 2-3: Empower and increase engagement of community members and groups in local and regional resilience planning and decision-making.

Activities under this action include providing technical support and financial incentives to community members for participation in planning and decision-making processes; increasing capacity of staff dedicated to community engagement; and forging new relationships with relevant community groups to facilitate inclusion in planning processes.

Other actions that support objective: CWHW 1-3, CWHW 5-4, THAW 2-3, THAW 4-1, THAW 4-2, SRC 1-1, SRC 3-2, IEP 1-1, IEP 2-1, IEP 3-1

Objective 3: Resilience Initiative Implementation

SRC 3: Implement initiatives to improve community resilience to flooding and other environmental challenges.

The primary measure of success is the implementation of 200 resilience initiatives by communities in the New York and Connecticut portions of the Long Island Sound watershed. This measure is based on the current number of projects supported annually through Long Island Sound Futures Fund and the Long Island Sound Sustainable and Resilient Communities assistance programs. Initiatives could include implementation of green infrastructure, living shorelines, flood mitigation projects, stormwater management projects, road-stream crossing improvements, stream barrier removal projects, habitat restoration (e.g., marsh restoration and urban tree projects), policy improvements or changes, zoning and code updates, and new funding mechanisms to support resilience projects (e.g., creation of stormwater utilities). Prioritization and implementation of initiatives should follow the PERSISTS framework, which serves as a guide for Long Island Sound communities to move projects from concept to implementation.

ACTIONS

SRC 3-1: Increase community capacity to implement and manage sustainable and resilient initiatives.

Activities under this action include enhancing community capacity to implement, manage, and sustain initiatives through continuation of existing financial and technical assistance programs (e.g., Long Island Sound Resilience Grant Writing Assistance and Planning Support Programs), establishing new programs, and efforts supporting new partnerships.

SRC 3-2: Support the development and adoption of regulations, codes, and ordinances that increase community resilience.

Activities under this action include developing and adopting proposed new or updated codes and regulations and providing programming and technical resources to aid municipalities with reviewing and updating local codes.

SRC 3-3: Implement nature-based solutions to address flooding and other climate impacts while providing multiple benefits.

Activities under this action include protecting and restoring coastal, riparian, and upland habitats; implementing living shorelines and green infrastructure projects; and evaluating the use of nature-based solutions as an option or component of resilience projects.

SRC 3-4: Implement priority infrastructure projects that increase community sustainability and resilience to flooding and other climate impacts.

Activities under this action include integrating nature-based solutions when feasible and modifying infrastructure (i.e., install, upgrade, resize, relocate, and remove) in a manner that maximizes sustainability and ensures viability of coastal resources.

SRC 3-5: Monitor, maintain, and adaptively manage resilience projects to ensure their long-term success.

Activities under this action include providing technical and monetary support for the development and implementation of monitoring, maintenance, and adaptive management strategies; and developing tracking and monitoring systems to evaluate projects region-wide to inform best practices.

Other actions that support objective: CWHW 2-1, CWHW 2-2, CWHW 3-1, CWHW 5-2, CWHW 5-4, THAW 1-1, THAW 1-2, THAW 3-2, THAW 4-1, THAW 4-2, SRC 2-2, SRC 2-3, IEP 1-1, IEP 1-2

INFORMED AND ENGAGED PUBLIC

Inspire and empower the public to appreciate, value, and protect Long Island Sound and the waters that flow into the Sound.

INTRODUCTION

Long Island Sound is nestled between several urban centers, including New York City, one of the most densely populated cities in the country. With nearly 25 million people living within 50 miles of the Sound, the pressure on its ecological health is immense, further compounded by extreme weather events and a changing climate (see Appendix D). Several of the challenges the Sound currently faces, such as marine debris and nitrogen pollution from fertilizer and septic systems, can be ameliorated by specific behavior changes from individuals and communities. However, competing social, cultural, and economic priorities prevent many people from enjoying, learning about, and engaging in sustainable behaviors related to the Sound. Limited access to the Sound and insufficient education about its health and ecological processes hinder community engagement in its stewardship, ultimately limiting the effectiveness and potential of ongoing restoration efforts.

A public that is informed and engaged on issues related to Long Island Sound can more fully appreciate and enjoy all the Sound has to offer and be active participants in its ongoing conservation, which is vital to achieving the Partnership's vision. Residents that understand environmental issues can be better stewards of the watershed and adopt behaviors that help maintain or improve its health.

Adequate public access is an important first step to facilitating people's enjoyment and appreciation of the Sound and its watershed. The quality of access is determined by the availability of transportation options, reasonable cost, and appropriate amenities at each location. Once people can access and enjoy the Sound, they are more likely to be open to learning about it and what can be done to improve and sustain it. The Partnership can provide some of that education directly in addition to providing the tools and means for other organizations to reach additional students, adults, and user groups. Ultimately, increased access, education, and resources will encourage the public to engage in more stewardship and sustainable behaviors within the region – culminating in an improved Long Island Sound for all.

Achieving the Informed and Engaged Public goal requires addressing the factors that most impact its realization: public access and sense of belonging, education and environmental literacy, and fostering stewardship and sustainable behaviors. Each objective is followed by actions and supporting activities to be taken in the next five years (2025-2029) to help achieve it. Refer to Appendix B for technical explanations of the objectives and actions.

Objective 1: Public Access and Sense of Belonging

IEP 1: Increase and improve opportunities for everyone to access and appreciate Long Island Sound and the waters that flow into the Sound.

The primary measures of success are to create 40 new sites and improve 60 existing sites, including 30 improved sites in communities with limited access opportunities, around Long Island Sound's shoreline and its connecting waterbodies in Connecticut and New York. Success will also be measured by an increased sense of belonging, based on findings from public perception surveys of Long Island Sound watershed residents. The numerical targets for new and improved sites were established by calculating the number of sites created under the 2015 CCMP and those improved in recent years through the Long Island Sound Futures Fund grant program and slightly increasing those numbers. The measure for increasing access is based on a recent public perception survey that shows that existing coastal access in these communities is inadequate. State and Partnership-supported programs, events, and major festivals that enable safe use and enjoyment of Long Island Sound and its connecting waterbodies can provide indicators of progress in meeting the overall objective.

A site improvement consists of one or more physical or long-term programmatic changes that improves the site's accessibility for the public, including people with disabilities, families, and distressed communities.

ACTIONS

IEP 1-1: Collaborate with local government, environmental groups, and community leaders to increase and improve public access and a sense of belonging.

Activities under this action include planning, coordinating, and collaborating to develop new strategies to expand public access to the Sound and foster a sense of belonging.

IEP 1-2: Develop and implement projects that increase the number and quality of public access sites.

Activities under this action include implementing projects through the support of grant programs.

IEP 1-3: Promote a sense of belonging at public access sites through events, festivals, celebrations, materials, and programming.

Activities under this action include increasing the usage of public access sites by raising awareness and developing opportunities to increase a sense of belonging and connection to the water.

Other actions that support objective: THAW 4-1, THAW 4-2, IEP 2-2, IEP 2-3

Objective 2: Education and Environmental Literacy

IEP 2: Improve and expand the public's environmental knowledge of Long Island Sound and its watershed.

The primary measure of success is to engage 1.3 million members of the public, including youth, educators, and adults, in Long Island Sound educational programming and outreach by 2030.

The numeric target is based on engaging a total of 275,000 people a year, which is a 10 percent increase from the 2023 Long Island Sound Futures Fund reporting and program data.

ACTIONS

IEP 2-1: Increase collaboration between environmental education partners to expand the visibility of existing programs and to promote the creation of new initiatives.

Activities under this action include collaborating, networking, and resource sharing to support environmental literacy efforts and promote unified messaging.

IEP 2-2: Host and promote opportunities to participate in Long Island Sound-based formal and informal educational programs tailored for multiple user groups and ages.

Activities under this action include hosting educational programs and opportunities for diverse user groups and promoting other such events throughout the region.

IEP 2-3: Develop engaging, multilingual, and innovative Long Island Sound educational and informational materials, tools, and activities for people of all ages and abilities.

Activities under this action include developing, sharing, and promoting informational materials and tools.

IEP 2-4: Support efforts to assess the public's understanding of Long Island Sound and its watershed.

Activities under this action include developing tools and methods to assess and monitor the public's environmental literacy as it pertains to Long Island Sound and its watershed.

Other actions that support objective: CWHW 5-1, THAW 2-3, THAW 4-2, IEP 1-2, IEP 1-3, IEP 3-2, IEP 3-3, IEP 3-4

Objective 3: Fostering Stewardship and Sustainable Behaviors

IEP 3: Increase public engagement in environmental practices that protect and conserve Long Island Sound and its watershed.

The primary measure of success is to support 18 projects or campaigns per year focused on promoting sustainable behaviors and stewardship. An additional measure is to engage 28,000 volunteers through Partnership-supported efforts. These targets are based on a review of the number of behavior change projects and volunteer events in 2022 and 2023, for which the Partnership provided financial, hands-on, or technical support.

ACTIONS

IEP 3-1: Increase opportunities to involve the public in the monitoring, restoration, and conservation of Long Island Sound and its ecosystems through volunteerism, participatory science, and community-led action.

Activities under this action include encouraging stewardship by promoting existing opportunities, developing new ways to connect with the public, and recognizing community champions and volunteers.

IEP 3-2: Investigate the relationship between the public and the Long Island Sound ecosystem through social science research.

Activities under this action include economic evaluations and social science research, surveys, and assessments to help inform outreach campaigns.

IEP 3-3: Develop campaigns and share messages to encourage residents, both homeowners and renters, to adopt environmentally friendly practices at home, school, work and in their communities.

Activities under this action include encouraging sustainable practices on land that can help conserve Long Island Sound.

IEP 3-4: Promote environmentally friendly behaviors at the Sound, its coast, and its tributaries through outreach to beachgoers, boaters, anglers, and other users of the Sound.

Activities under this action include encouraging sustainable practices in the Sound's waters and shorelines.

IEP 3-5: Provide information, programming, incentives, and resources (e.g., educational toolkits) that enable local environmental groups, municipalities, schools, and other user groups to teach and promote sustainable practices in their communities.

Activities under this action include providing support and resources to local groups so that they can promote sustainable practices in their communities.

Other actions that support objective:

CWHW 3-1, CWHW 5-1, CWHW 5-2, CWHW 5-3, CWHW 5-4, THAW 1-1, THAW 2-3, THAW 4-2, SRC 3-3, IEP 1-2, IEP 1-3, IEP 2-2, IEP 2-3

STUDENTS FROM BRIEN MCMAHON HIGH SCHOOL
in Norwalk use nets to capture, identify, and
measure fish in a salt marsh environment
adjacent to Bocuzzi Park in Stamford.
Photo by Frances V. Isaac – FVI Photography.

