

# GLOSSARY

**Acidification (ocean)** – Increased concentrations of carbon dioxide in sea water causing a measurable increase in acidity (i.e., a reduction in ocean pH). This may lead to reduced calcification rates of calcifying organisms such as corals, mollusks, algae, and crustaceans.

**Adaptation Plan** – A plan developed by a community to pro-actively adapt to future changes in climate and plan for associated riparian and coastal impacts.

**Adaptive Management** – A systematic approach for improving resource management by learning from management outcomes.

**Anadromous** – see **Diadromous**.

**Anaerobic** – In the absence of oxygen, e.g., anaerobic decomposition of organic matter leads to the production of methane (CH<sub>4</sub>).

**Anoxic** – In the absence of oxygen. In some cases, management may functionally define water below a certain threshold (e.g., 1 mg/l) as anoxic, since it supports very little life, but to be truly anoxic, the concentration must drop to zero.

**Anthropogenic** – Caused by, or resulting from, human activities.

**Aquaculture** – The farming of aquatic organisms such as fish, shellfish and even plants. The term aquaculture refers to the cultivation of both marine and freshwater species and can range from land-based to open-ocean production.

**Benthic** – Pertaining to, or living on, the seafloor or river bottom.

**Best Management Practice** – Methods or techniques found to be the most effective and practical means of achieving an objective. Often used to refer to a management practice to control nonpoint source runoff.

**Biodiversity** – The number and variety of organisms found within a specified geographic region.

**Bioextraction** – Nutrient bioextraction (also called bioharvesting) is the practice of farming and harvesting shellfish and seaweed for the purpose of removing nitrogen and other nutrients from natural waterbodies.

**Biological Nutrient Removal** – Wastewater treatment technology that uses microorganisms to remove nitrogen and phosphorous from effluent.

**Biota** – All living organisms within an area or region; includes both plants and animals.

**Blueway** – A water trail or path that is developed with launch points, camping locations and other points of interest for canoeists, paddle boarders and kayakers. Blueways are typically developed by state, county or local municipalities to encourage recreation, ecological education and preservation of wildlife resources.

**Brownfield** – Land previously used for industrial purposes or commercial uses. The land may be contaminated by low concentrations of hazardous waste or pollution and has the potential to be reused once it is cleaned up.

**Climate Adaptation and Resiliency** – Preparing for the impacts of climate change by understanding the risks from predicted changes and taking steps to reduce vulnerabilities to those risks.

**Coastal Habitat Extent** – A category of habitat that includes all of the twelve priority habitat types identified by the LISS Habitat Restoration Work Group for management and restoration. This category includes eelgrass and tidal wetlands. While separate and specific restoration targets are set for these two habitat types, gains in these two areas can be used to reach the total coastal habitat restoration targets.

**Combined Sewers** – Sewer systems, which are designed to carry both rainwater runoff and municipal sewage in a single pipe to a wastewater treatment facility (WWTF). During heavy storms or snow melts, this type of system can overwhelm the capacity of the WWTF, resulting in discharge of some of the water (including some raw sewage) directly into nearby waterbodies through combined sewer overflow (CSO) pipes.

**Contaminant** – Any physical, chemical, biological, or radiological substance found in air, water, soil or biological matter that has a harmful effect on plants or animals (including humans); harmful or hazardous matter introduced into the environment.

**Decentralized Wastewater Treatment System** – A system that is used to treat and dispose of relatively small volumes of wastewater, generally from institutions and businesses. Onsite, decentralized wastewater systems treat sewage that is generated from residential or commercial activities from the same location. These systems include conventional septic systems, cesspools, and sewage treatment systems.

**Diadromous** – A species, which spends part of its life cycle in fresh water, and part in salt water. Diadromous species can be anadromous, living in the ocean and migrating to fresh water to breed (e.g., salmon, alewife, herring) or, less commonly catadromous, living in fresh water but migrating to the ocean to breed (e.g., American eel).

**Economic Development Plan** – A plan developed by a community to promote economic growth and development.

**Ecosystem** – A cohesive system formed by the interactions between a community of living organisms in a particular area with each other and the nonliving environment around them.

**Ecosystem-based Management** – An environmental management approach that recognizes the interactions within an ecosystem, rather than considering single issues, species, or ecosystem services in isolation.

**Ecosystem service** – The processes by which the environment produces resources that humans use such as clean water, timber, and habitat for fisheries, and pollination of native and agricultural plants.

**Eelgrass** – A marine flowering plant rooted in the sediment. It is the most abundant seagrass in Long Island Sound, and is an important habitat for many species of fish and invertebrates. Its Latin species name is *Zostera marina*.

**Effective Impervious Cover** – The impervious area that is directly connected to stream channels.

**Environmental Indicator** – Documented measurement, statistic, or value of a substance or effect in an environment. Used as a barometer to identify the presence or level of the factor/characteristic impacting the environment. The overall condition or quality of the environment is detailed by the set of such indicators and their periodic trend points.

- Environmental Justice** – The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.
- Estuary** – A partially closed coastal body of water where freshwater and saltwater mix.
- Eutrophication** – The process by which a body of water becomes enriched in dissolved nutrients that stimulate the growth of aquatic plant life, usually resulting in the depletion of dissolved oxygen.
- Green Infrastructure** – Describes an array of technologies, approaches, and practices that protect and use natural systems, or systems engineered to mimic natural processes, to manage rain water as a resource, to solve combined sewer overflows (CSOs), enhance environmental quality, and achieve other economic and community benefits. Also this term can be synonymous with natural infrastructure, in contrast with grey infrastructure, which uses traditional practices, such as sewers and pipes, for stormwater management and wastewater treatment.
- Greenway** – A stretch of undeveloped land close to urban area that is kept for recreational use.
- Habitat** – The physical and chemical environment in which a plant or animal lives.
- Harmful Algal Bloom (HAB)** – A bloom of algae (often phytoplankton) that causes negative impacts to other species often through use of toxins, but also through mechanical or other means.
- Hazard Analysis and Critical Control Point (HACCP) plans** – A written document that identifies food (i.e., shellfish) safety hazards that are reasonably likely to occur in a food process, creating controls to prevent the hazard, and then monitoring those controls to ensure food safety.
- Hazard Mitigation Plan** – A municipal plan developed to reduce or eliminate long-term risk to human life and property from natural hazards.
- Heavy Metals** – A loosely defined term often used to refer to the group of metals and metalloids, which are associated with contamination or ecotoxicity. Typically includes transition metals, lathanoids, actinoids, and some metalloids.
- Hydrology** – The study of movement of water and the interactions of the body of water with its boundaries.
- Hypoxic** – Low in dissolved oxygen. While no universal threshold exists for what is considered hypoxia, most organizations use an operational definition of less than approximately 3mg/l of oxygen (See **Anoxic**).
- Impervious Cover** – Any surface in the landscape that cannot effectively absorb or infiltrate rainfall.
- Invasive Species** – Non-native species whose introduction does, or is likely to, cause economic or environmental harm or harm to human health.
- Legacy Contaminants** – Pollutants or chemicals, often produced by industry, which remain in the system long after they are discharged, such that their ecological impact continues even after discharge has been curtailed.
- Living Shorelines** – A shoreline stabilization technique using plants, sand, and limited use of rock to provide shoreline protection and maintain valuable habitats.
- Low Impact Development** – Management approach and set of practices that can reduce runoff and pollutant loadings by managing runoff as close to its source(s) as possible.
- Management Conference** – The Long Island Sound Study management conference is a partnership of federal, state, interstate, and local agencies, universities, environmental groups, industry and the public working together to implement the goals and objectives set forth in the CCMP. It is made up of the LISS committees and working groups— <http://longislandsoundstudy.net/about/committees/>.
- Marine Spatial Planning (MSP)** – A future-oriented process of evaluating and managing the spatial and temporal components of three-dimensional marine environments in order to achieve ecological, economic, and social objectives.
- Monitoring** – A series of measurements of water quality or other parameters made with the goal of detecting changes in the environment.
- Moraine** – An accumulation of boulders, stones, and debris carried and deposited by a glacier.
- Municipal Comprehensive Plan** – Provides a general, broad overview of the physical development in a community and provides a plan for how the community should develop or re-develop in the future.
- Nitrogen** – The most abundant element in Earth's atmosphere. Constitutes approximately 78 percent of the air we breathe. Nitrogen is an essential nutrient for all organisms, forming a component of many proteins and amino acids, but virtually all of the nitrogen on earth is in the form of dinitrogen gas (N<sub>2</sub>), which cannot be used by most organisms. These organisms are instead dependent on the much rarer dissolved inorganic nitrogen, which is frequently the nutrient that limits primary production in marine ecosystems. Anthropogenic activities contribute a large amount of nitrogen to coastal marine ecosystems, primarily through sewage discharge, agricultural fertilizer, and industrial emissions.
- Nitrogen Trading Program** – A nutrient reduction program developed by CTDEEP in which communities that reduced nitrogen through upgrading WWTPs, and have exceeded their targets, can sell credits in an exchange, which can then be purchased by communities that have not yet met their targets.
- Nonpoint Source** – A source of pollutants not restricted to a clearly identifiable discharge location like a river, pipe, or culvert (See **Point Source**).
- Nutrient Loading** – The mass of reactive nitrogen entering an aquatic system from external sources, e.g., WWTFs, OSWTSS, atmospheric deposition, fertilizer, etc.
- Nutrients** – Essential elements required by an organism for growth. In a marine context, this term is typically used to refer to nitrogen and phosphorus, but can also include silica (required by diatoms) and micronutrients such as iron, zinc, magnesium, etc.
- Pathogen** – Disease-causing bacteria, viruses, and protozoan often transmitted to people when they consume or come in contact with contaminated water.

**Phosphorus** – An essential nutrient for all organisms naturally contributed to marine systems primarily from the weathering of rocks. Phosphorus readily binds up into forms that are not biologically available and is typically the nutrient limiting primary productivity in freshwater and oligohaline environments. Humans contribute phosphorus to marine systems primarily from detergents and industrial surfactants, but also from sewage and fertilizer.

**Photosynthesis** – The process carried out by plants and some bacteria, in which light energy is harvested by pigments (mostly chlorophyll) and utilized to convert carbon dioxide and water into organic molecules (sugars) and oxygen. This process requires nutrients such as nitrogen and phosphorus as well as several other trace nutrients (iron, manganese, zinc, etc.).

**Point Source** – A specific localized and stationary source of a pollutant (e.g., nutrients, sediment, toxic metals) such as a pipe, culvert, or outfall (See **Nonpoint Source**).

**Remote Sensing** – The science of obtaining information about objects or areas from a distance, typically from aircraft or satellites.

**Resilience** – The ability of a community (both human and natural) to “bounce back” after hazardous events such as hurricanes, coastal storms, and flooding—rather than simply reacting to impacts.

**Resiliency Plan** – A plan developed by a community to evaluate the vulnerability of infrastructure, riparian and coastal areas and develop strategies for making these features and infrastructure more resilient to hazardous events (e.g., sea level rise and/or weather events). The plan should include the preservation of natural means to protect built environment where practical and also preserve and protect ecosystem services.

**Riparian Buffer** – The vegetated area adjacent to a river, stream, or other waterbody.

**Runoff** – Flows of water into a stream, lake, or estuary; typically from a rainfall event where rate of accumulation exceeds losses from infiltration and evapo-transpiration.

**Sentinel Monitoring** – A national model for tracking the effects of climate change.

**Smart Growth** – A range of development and conservation strategies intended to protect the natural environment, while simultaneously making communities more attractive, economically stronger, and more socially diverse.

**Social Media** – The strategies by which people interact and create, share or exchange ideas and information through the Internet (e.g., Facebook, Twitter, and LinkedIn).

**Stewardship** – The conserving and managing of natural areas to plan for multiple uses, increase public access, and protect important habitats.

**Stewardship Area** – One of 33 areas in Long Island Sound identified by the Long Island Sound Study as having significant recreational and/or ecological value to Long Island Sound. The boundaries of the Stewardship Areas are not strictly defined.

**Stewardship Site** – A property, with defined parcel boundaries, within a Stewardship Area that has been identified as representing the values or features for the Area that is being highlighted. The landowner of each Stewardship Site has granted permission for the land to be designated as a Stewardship Site.

**Sustainability** – Meeting the needs of the present without compromising the ability of future generations to meet their own needs: in particular using natural resources wisely to ensure their availability in the future.

**Sustainability Plan** – A plan developed by a community to ensure they are meeting the needs of the present without compromising the ability of future generations to meet their own needs; this includes proper stewardship of the natural environment to preserve it for the future.

**Targeted Habitat Types** – Twelve habitat types that are targeted by the Long Island Sound Study Habitat Restoration Work Group for restoration and management. The twelve habitats types are 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.

**Tidal Wetland Extent** – A category of habitat that is included in the twelve habitat types identified by the LISS Habitat Restoration Work Group for management and restoration. Tidal wetland acres restored are included in the coastal habitat extent target as well as tidal wetland restoration target.

**Total Maximum Daily Load (TMDL)** – The total maximum amount of a pollutant a waterbody can assimilate while still meeting water quality standards.

**Trade Equalized Nitrogen** – A calculation of the effect a pound of nitrogen leaving a point source will eventually have when it reaches Long Island Sound.

**Tributary** – A river or stream, which flows into a larger river or lake.

**Trust Species** – Migratory birds, threatened species, endangered species, inter-jurisdictional fish, marine mammals, and other species of concern.

**Turbidity** – Measure of the amount of suspended particulate matter in water, which is inversely related to water clarity.

**Wastewater Treatment** – A process designed to clean and treat raw sewage to remove pollutants. Generally a three-part process, consisting of primary treatment involving screening and settlement of large particles, secondary treatment, involving anaerobic digestion of organic sludge. Water is then chlorinated and/or treated with UV sterilization to remove bacterial contaminants and discharged into the receiving waterbody. Tertiary or advanced wastewater treatment removes inorganic nutrients (nitrogen and/or phosphorus) from effluent prior to discharge.

**Watershed** – The region draining into a river, river system, or other body of water.