

G. GLOSSARY

A-Weighted Decibel (dBA): An overall frequency-weighted sound level in decibels which approximates the frequency response of the human ear.

Acoustic: Operated by or utilizing sound waves.

Acute: An effect having a sudden onset and lasting a short time.

Acute Water Quality Criteria: A water quality criteria recommendation for the highest in-water concentration of a chemical or effluent to which organisms can be exposed for a brief period of time without causing an acute effect.

Algae: Simple rootless plants that grow in bodies of water (e.g. estuaries) at rates in relative proportion to the amounts of nutrients (e.g. nitrogen and phosphorus) available in water.

Ammonium: (NH₄⁺) chemical compound that is a source of nitrogen for plants and microorganisms.

Amplitude: The maximum departure of the value of an alternating current or wave from the average value.

Anadromous: Fish that spend most of their life in salt water but migrate into freshwater tributaries to spawn (i.e. shad, sturgeon).

Analyte: A single chemical constituent.

Anomaly: Something different, abnormal, peculiar, or not easily classified; irregularity.

Anthropogenic: Influenced by the activities of humans.

Anoxia/Anoxic: Without dissolved oxygen or in oxygen deficit. Dissolved oxygen concentrations of 0 mg/l (MDE 1994).

Assemblage: A group of populations of similar organisms that co-occur and interact.

Astronomical Tide: The tidal levels and character which result from gravitational effects from the Earth, Sun, and Moon, without atmospheric influences.

Bathymetry: The physical characteristics, including depth, contour, and shape of the bottom of a body of water, such as oceans, seas, bays and lakes.

Bay Bridge: WM Preston Lane Jr. Memorial Bridge. Located between Kent Island and Cape St. Clair, Maryland.

Benthic: Living in, on, or in close association with the bottom of a body of water.

Benthic Index of Biotic Integrity: Evaluates the ecological condition of a sample by comparing values of key benthic community attributes to reference values expected under non-degraded conditions in similar habitat types.

Benthic Macroinvertebrates: Macroinvertebrates are large, generally soft-bodied organisms that lack backbones. Benthic macroinvertebrates live in or on the bottom sediment in aquatic environments.

Benthos: A group of organisms, most often invertebrates, that live in or on the bottom in aquatic habitats (such as clams that live in the sediments) which are typically immotile or of limited motility or range.

Bioaccumulation: The accumulation of chemical constituents in the tissue of organisms through any route, including respiration, ingestion, or direct contact with chemical constituents in water, sediment, pore water, or dredged material.

Bioavailable: In a form that is readily consumed or assimilated by organisms. Some metals and chemical constituents bind to particulates and are not available for uptake by organisms.

Biodiversity: The assemblage of different species found in any ecosystem.

Biotic: Life and living organisms.

Bloom: A large population increase of phytoplankton that remains within a defined part of the water column.

Body Burden: The concentration of a chemical constituent that accumulates in the tissue of an organism.

Borrow Area: Area from which material (e.g., sand, soil, etc.) is taken for use in another location.

Candela: The basic unit of luminous intensity adopted under the Systeme International d'Unites; equal to 1/60 of the luminous intensity per square centimeter of a black body radiating at the solidification temperature of Platinum, 2,046 degrees Kelvin.

Capping: The controlled, accurate placement of contaminated material at an open-water placement site, followed by a covering or cap of clean material to isolate contaminated sediment from the overlying aquatic environment [In this context, "contaminated" refers to material found to be unacceptable for unrestricted open-water placement because of potential contaminant effects, while the term "clean" refers to material found to be acceptable for such placement].

Catadromous: Fish that live in freshwater and migrate to saltwater to spawn (i.e. American eel).

Chain of Custody: Documentation that describes the date and time of collection for each environmental sample (sediment, water, or tissue), and the date and time of transfer of each environmental sample to the analytical or ecotoxicological laboratory.

Chlorophyll *a*: A photosynthetic pigment found in plants, including phytoplankton. Frequently utilized as an estimate of plant or phytoplankton standing crop.

Chronic: An effect involving a stimulus that is lingering or which continues for a long time.

Chronic Water Quality Criteria: A water quality criteria recommendation for the highest in-water concentration of a chemical or effluent to which organisms can be exposed indefinitely without causing unacceptable effects.

Clay: A fine grained, plastic, sediment with a typical grain size less than 0.004 mm. Possesses electromagnetic properties which bind the grains together to give a bulk strength or cohesion.

Coast: A strip of land of indefinite width that extends from the shoreline inland to the first major change in terrain features.

Coastal Plain: The level land with generally finer and fertile soils downstream of the piedmont and fall line, where tidal influence is felt in the rivers.

Coastline: Line separating the coast and the shore, or, more commonly, the boundary between land and water.

Cohesive Sediment: Fine-grained sediment containing a significant proportion of clays, the electromagnetic properties of which cause the sediment to bind together. Cohesive sediments tend to have high shear strengths.

Community: An ecological unit consisting of the micro-organisms, animals, and plants that inhabit a particular area.

Compaction: A decrease in the volume or thickness of a sediment or soil under load through the closer packing of constituent particles; accompanied by a decrease in porosity and an increase in density.

Comparability: The confidence with which one data set can be compared to others and the expression of results consistent with other organizations reporting similar data. Comparability of procedures also implies using methodologies that produce results comparable in terms of precision and bias.

Compatibility: The degree to which landscape elements and characteristics are still unified within their setting.

Congener: A member of a family of chemical compounds sharing similar structure and characteristics.

Contaminant: A chemical or biological substance in a form that can be incorporated into, onto, or be ingested by and that harms aquatic organisms, consumers of aquatic organisms, or users of the aquatic environment.

Contour: an outline especially of a curving or irregular figure; *also* : the line representing this outline producing effects by reason of quantitative differences.

Core sample: Rock, sediment, or soil that is extracted by drilling and used for analysis.

Coriolis Force: Force due to the Earth's rotation, capable of generating currents. It causes moving bodies to be deflected to the right in the Northern Hemisphere and to the left in the Southern Hemisphere. The "force" is proportional to the speed and latitude of the moving object. It is zero at the equator and maximum at the poles.

County Subdivision: The primary legal or statistical division of a county or statistically equivalent entity, as defined by the United States Census Bureau.

Crustaceans: The class of aquatic Arthropods including copepods, isopods, amphipods, barnacles, shrimp, and crabs which are characterized by having jointed appendage and gills.

Current: A flow of water, typically generated by wave action, tidal fluctuations, or winds.

Current Rose: Graphic representation of currents, utilizing arrows to the direction toward which the prevailing current flows and a percentage to show the frequency of any given flow.

Decibel: A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.

Depth: The vertical distance from a specified tidal datum to the sea floor.

Designated Use: An element of a water quality standard, expressed as a narrative statement, describing an appropriate intended human and/or aquatic life objective for a water body. Designated uses for a water body may include: recreation, shellfishing, water supply and/or aquatic life habitat.

Differential: Producing effects by reason of quantitative differences.

Digital: Relating to an audio recording method in which sound waves are represented so that in the recording wow and flutter are eliminated and background noise is reduced.

Dike: An embankment constructed (typically using soil and rock) to contain dredged material or to serve as a protective barrier.

Dioxin: A family of carcinogenic hydrocarbons.

Direct Economic Impact: Amount of direct economic activity and change in local business activity occurring as a direct consequence of the project.

Dissolved Oxygen: Microscopic bubbles of oxygen that are mixed in the water and occur between water molecules. Dissolved oxygen is necessary for healthy lakes, rivers, and estuaries. Most aquatic plants and animals need oxygen to survive. Fish will drown in water when the dissolved oxygen levels get too low. The absence of dissolved oxygen in water is a sign of possible pollution.

District: A U.S. Army Corps of Engineers administrative area.

Diversity: A measure of the number of species coexisting in a community.

Dredged Material: Material that is excavated or dredged from waters of the United States.

Dredging: Excavation or displacement of the bottom or shoreline of a water body with mechanical or hydraulic machines. Done to maintain channel depths or berths for navigational purposes, for shellfish harvesting, for cleanup of polluted sediments, and as a source for placement of sand on beaches.

Ebb Current: The movement of a tidal current away from shore or down a tidal stream. The terms of maximum ebb and minimum ebb are applied to the maximum and minimum velocities of a continuously running ebb current, the velocity alternately increasing and decreasing without coming to a slack or reversing. The expression maximum ebb is also applicable to any ebb current at the time of greatest velocity

Ebb Tide: The period of tide between high water and the succeeding low water; a falling tide.

Effluent: The discharge to a body of water from a defined source, generally consisting of a mixture of waste and water from industrial or municipal facilities.

Environmental Impact Statement (EIS): Required by NEPA for actions that could result in significant environmental impacts or for projects that are not eligible for an Environmental Assessment and Finding of No Significant Impact (FONSI). Results in a Record of Decision from the District Commander, U.S. Army Corps of Engineers (USACE).

Emissions: Refers to pollution being released or discharged into the air from natural or man-made sources. Pollutants may be released directly into the air from a structural device (i.e., smokestack, chimney, exhaust pipe) or indirectly via volatilization or dispersal (i.e., aerosol spraying).

Environmental Assessment: A document required by NEPA, which provides sufficient information to the District Commander, USACE on potential environmental effects of the proposed action and its alternatives to determine if an EIS or FONSI is required.

Epibenthic: The area on top of the sea floor. Epibenthic organisms may be freely moving or sessile (permanently attached to a surface).

Epifaunal: Plants, animals and bacteria that are attached to the hard bottom or substrate (for example, to rocks or debris); are capable of movement; or that live on the sediment surface.

Essential Fish Habitat (EFH): Those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity.

Eutrophic: Describes an aquatic system with high nutrient concentrations. These nutrient concentrations fuel algal growth. This algae eventually dies and decomposes, with reduces the amount of dissolved oxygen in the water.

Eutrophication: The fertilization of surface waters by nutrients that were previously scarce. Eutrophication through nutrient and sediment inflow is a natural aging process by which warm shallow lakes evolve to dry land. Human activities are greatly accelerating the process. The most visible consequence is the proliferation of algae. The increased growth of algae and aquatic weeds can degrade water quality.

Evaluation: The process of judging data in order to reach a decision.

Exposure: The period of time during which an organism is exposed to a laboratory test concentration or field condition.

Extirpated: A wildlife species that no longer survives in regions that were once part of its native range and is locally extinct, but still exists somewhere else.

Fastland: Additional land that extends into a waterbody that is created using dredged material.

Fathometer: Sonic depth finder

Federal Standard: The dredged material placement alternative(s) identified by the U.S. Army Corps of Engineers that represent the least costly, environmentally acceptable alternative(s) consistent with sound engineering practices and which meet the environmental standards established by the 404(b)(1) evaluation process. [See Engle et al. (1988) and 33 CFR 335-338]. The Federal standard was developed from a national perspective and considers, but is not bound by, State or local regulations.

Ferrous: Objects composed of or containing iron such as fasteners, anchors, engine parts, ballasts, weaponry, cargo, tools, and miscellaneous related debris.

Fetch: The horizontal distance (in the direction of the wind) over which a wind generates waves.

Fetch Length: The horizontal distance (in the direction of the wind) over which a wind generates waves or creates a wind setup.

Fetch-limited: Situation in which wave energy (or wave height) is limited by the size of the wave generation area (fetch).

Fetch Lines: See Fetch Length.

Flood Current: The movement of a tidal current toward the shore or up a tidal stream. The terms maximum flood and minimum flood are applied to the maximum and minimum velocities of a flood current the velocity of which alternately increases and decreases without coming to slack or reversing. The expression maximum flood is also applicable to any flood current at the time of greatest velocity.

Flood Tide: The period of tide between low water and the succeeding high water; a rising tide.

Freeboard: The mandatory height that must be kept between the top of the dredged material/water surface and the containment structure crest to allow for the occurrence of a design rainfall without overtopping the containment structure.

Glare: Light emitted at an intensity great enough to reduce a viewer's ability to see, and in extreme cases causing momentary blindness.

Grab Sampling: The collection of surficial sediments (the top 4-8 inches) using a sampling device with a jaw that grabs a bite of sediment.

Grain-size Effects: Mortality or other effects in laboratory whole sediment bioassays due to sediment granulometry, not chemical toxicity. [It is clearly best to use test organisms which are not likely to react to grain-size, but if this is not reasonably possible, then testing must account for any grain-size effects.]

Ground Truth: The facts that are found when a location is field checked (visited on foot). Used in cartography and analysis of aerial photographs and satellite imagery.

High Tide (high water): Maximum elevation reached by each rising tide.

Higher High Water: The higher of the two high waters of any tidal day.

Hindcast: See Wave Hindcasting.

Hindcasting, Wave: In wave prediction, the retrospective forecasting of waves using measured wind information.

Hypoxia/Anoxia: Deficiencies in the concentration of dissolved oxygen in aquatic systems.

Hypoxic/Hypoxia: Having dissolved oxygen concentrations less than 4 to 5 mg/L (MDE, 1994).

Indirect Economic Impact: The economic activity felt by businesses that supply goods and services to support the project, such as meals bought in local restaurants.

Induced Economic Impact: The impact generated when surrounding businesses purchase additional products and services, and hire more employees to meet the demand brought on by the direct and indirect impacts of the project.

Infauna: Aquatic organisms that live in the substrate of a body of water, especially in a soft bottom or reef.

In-situ: Latin term meaning ‘in place’, especially in natural or original position. In research, this typically refers to data collection or analysis that occurs at the location where sampling occurs, in contrast to measurements conducted in a laboratory.

Intertidal: The area of shore located between high and low tides.

Invertebrates: Animals which lack a backbone and include such as squids, octopuses, lobsters, or shrimps, crabs, shellfishes, sea urchins and starfishes.

Juvenile: Strictly speaking, a juvenile is any of a species which is not yet sexually mature. In the context of many surveys, however, it is most often used interchangeably with young-of-year (YOY).

Land Use: The way land is developed and used in terms of the kinds of anthropogenic activities that occur (e.g. agriculture, residential areas, industrial areas).

Lethal: Causing death.

Lift: The layer of dredged material placed in a wetland or upland cell in each year.

Light Attenuation: Absorption, scattering, or reflection of light by water, chlorophyll a, dissolved substances, or particulate matter. Light attenuation reduces the amount of light available to submerged aquatic vegetation.

Light Trespass: Light that shines beyond the boundaries of the property on which it is located and onto areas where it is unwanted or interferes with land use.

Linear: Of, relating to, resembling, or having a graph that is a line and especially a straight line; involving a single dimension; of the first degree with respect to one or more variables; of, relating to, based on, or being linear equations, linear differential equations, linear functions, linear transformations, or linear algebra; characterized by an emphasis on line.

Loci: Plural of locus.

Locus: The location where the set of points occurs.

Low Tide (low water): Minimum elevation reached by each falling tide.

Lower Low Water: The lower of the two low waters of any tidal day.

Macroinvertebrate: Organisms greater than 0.5 mm, possessing no internal skeleton.

Macroplankton: Planktonic organisms that are 200-2,000 micrometers in size.

Macrotidal: An estuary with a tidal range greater than 4 meters.

Magnetic: Pertaining to a field or object that has qualities of polarity and attraction; pertaining to a body having the property of attracting iron and producing a field external to itself.

Magnetometer: An instrument used to detect the presence of a metallic object or to measure the intensity of a magnetic field.

Maintenance Dredging: Dredging necessary to keep the channels serving the Port at their nominal authorized depth and width.

Mean Abundance: Number of organisms per square meter.

Mean High Water (MHW): The average height of the high waters over a 19-year period. For shorter periods of observations, corrections are applied to eliminate known variations and reduce the results to the equivalent of a mean 19-year value. All high water heights are included in the average where the type of tide is either semidiurnal or mixed. Only the higher high water heights are included in the average where the type of tide is diurnal. So determined, mean high water in the latter case is the same as mean higher high water.

Mean Higher High Water (MHHW): The average height of the higher high waters over a 19-year period. For shorter periods of observation, corrections are applied to eliminate known variations and reduce the result to the equivalent of a mean 19-year value.

Mean Low Water (MLW): The average height of the low waters over a 19-year period. For shorter periods of observations, corrections are applied to eliminate known variations and reduce the results to the equivalent of a mean 19-year value. All low water heights are included in the average where the type of tide is either semidiurnal or mixed. Only lower low water heights are included in the average where the type of tide is diurnal. So determined, mean low water in the latter case is the same as mean lower low water.

Mean Lower Low Water (MLLW): The average height of the lower low waters over a 19-year period. For shorter periods of observations, corrections are applied to eliminate known variations and reduce the results to the equivalent of a mean 19-year value. Frequently abbreviated to **Lower Low Water**.

Mean Sea Level: The average height of the surface of the sea for all stages of the tide over a 19-year period, usually determined from hourly height readings. Not necessarily equal to Mean Tide Level.

Mean Tidal Range: Difference in height between **mean high water** and **mean low water**.

Mean Tide Level: The arithmetic mean of mean high water and mean low water.

Mean (Higher High, High, Low, Lower Low) Water: Average height of the (higher high, high, low, lower low) waters over a 19-year period.

Mesohaline: Moderately brackish water with low range salinities (from 5-18 parts per thousand).

Mesotidal: An estuary with a tidal range between 2 and 4 meters.

Microtidal: An estuary with a tidal range less than 2 meters. The Chesapeake Bay is a good example of a microtidal estuary.

Migratory: Describing groups of organisms which move from one habitat to another on a regular or seasonal basis.

Mooring: A place where or an object (as a craft) can be secured with lines or anchors.

Neap Tide: Tides of decreased range occurring semimonthly as the result of the moon being in quadrature. The neap range of the tide is the average semidiurnal range occurring at the time of the neap tides and is usually computed from harmonic constants.

New Work Dredging: Dredging needed to widen and deepen channels below existing conditions.

Nitrate: Salt or ester of nitric acid (NO₃⁻). It is an essential nutrient for phytoplankton growth, and its low surface water concentrations typically limit phytoplankton productivity.

Nitrite: Salt or ester of nitrous acid (NO₂⁻).

Noise: Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

Noise Attenuation: The reduction in the strength or energy of noise with increasing distance.

Non-cohesive Sediment: Sediments, such as coarse grained sediment (sand), that have low shear strengths.

Non-detect: A chemical constituent that is not detected or measured above the method detection limit in an analytical test.

Non-point Sources: A diffuse source of pollution that cannot be attributed to a clearly identifiable, specific physical location or a defined discharge channel. This includes the nutrients that runoff the ground from any land use - croplands, feedlots, lawns, parking lots, streets, forests, etc. - and enter waterways. It also includes nutrients that enter through air pollution, through the groundwater, or from septic systems.

Northeaster: A storm or strong wind from the northeast.

Nutrients: Compounds of nitrogen and phosphorus dissolved in water which are essential to both plants and animals. Too much nitrogen and phosphorus act as pollutants and can lead to unwanted consequences - primarily algae blooms that cloud the water and rob it of oxygen critical to most forms of aquatic life. Sewage treatment plants, industries, vehicle exhaust, acid rain, and runoff from agricultural, residential and urban areas are sources of nutrients entering the Bay.

Open Water Placement: Placement of dredged material in rivers, lakes, or estuaries via pipeline or release from hopper dredges or barges.

Overloading (cells): Placement of large quantities of dredged material in a cell during a given placement year and exceeding the optimal lift thickness.

Organophosphorus Pesticide: Similar in structure to some compounds acting as nerve gases. These were developed as more selective and less persistent alternatives to organochlorine pesticides such as DDT.

Overburden: Material not geotechnically suitable for use as foundation or borrow material in the construction of the containment structure designed for the Masonville DMCF. This material overlies material which is geotechnically suitable for either foundation or borrow material in the construction slated for the Masonville DMCF.

Overloading: Occurs when the annual placement capacity of a dredged material containment facility is exceeded. The annual placement capacity is determined by the site's surface area for dredged material placement and a 3 ft lift of hydraulically placed dredged material. Overloading can result in a loss of total site capacity by not allowing full normal consolidation to take place at the site.

Overtopping: Water carried over the top of a coastal structure because of wave run-up exceeding the crest height.

Particulate matter: Matter composed of particles that are not bound together (e.g., sand or dust).

pH: A measure of acidity or alkalinity on a scale of 0 (acidic) to 14 (basic), with 7 being neutral.

Phaeophytin: Degraded product of chlorophyll *a*. The amount of this compound in the water is an important estimate of the amount of phytoplankton in the surface water.

Phosphate: The anion (PO_4^-) or a salt of phosphoric acid. Essential to the metabolism of living organisms because inorganic phosphate is required for the synthesis of ATP. Plants and microorganisms take up phosphorus mainly in the form of phosphates, and various phosphates are used as fertilizers. Excess phosphate washed into streams and lakes contributes to eutrophication and formation of algal blooms.

Photic Zone: Layer of a body of water that receives ample sunlight for photosynthesis (usually less than 100m).

Phytoplankton: Microscopic plants (primary producers) found throughout aquatic systems. Plankton are usually very small organisms that cannot move independently of water currents. Phytoplankton are any plankton that are capable of making food via photosynthesis.

Piscivorous: Animals that primarily eat fish.

Planktivorous: Animals that primarily eat plankton.

Plankton: Passively drifting or weakly swimming small or microscopic algae and organisms associated with surface water and the water column.

Plankton bloom: Unusually high concentration of plankton (usually phytoplankton) in an area, caused either by an explosive or gradual multiplication of organisms.

Plume: A space containing a substance or characteristic released from a point source.

Polynuclear Aromatic Hydrocarbons (PAH): A group of over 100 different chemicals that are formed during the incomplete burning of coal, oil and gas, garbage, or other organic substances like tobacco or charbroiled meat. Some PAHs are manufactured. These pure PAHs usually exist as colorless, white, or pale yellow-green solids.

Polychlorinated Biphenyl (PCB): A large group of toxic synthetic lipid-soluble chlorinated hydrocarbons that are used in various industrial processes and that have become persistent environmental contaminants that can be concentrated in food chains.

Pound Net: A net used for entrapping and catching fish, that is attached to stakes and has a large enclosure and narrow entrance into which fish are directed.

Primary Producers: Organisms, such as algae, that convert solar energy to organic substances through the molecule, chlorophyll. Primary producers serve as a food source for higher organisms.

Primary Productivity: The amount of organic matter fixed by the autotrophic organisms in an ecosystem per unit time.

Probable Effects Level (PEL): An estimate of the concentration of a potentially toxic substance in the sediment above which the substance is likely to cause adverse effects to aquatic organisms.

Pycnocline: A layer of rapid change in water density with depth. In oceans this is mainly caused by changes in water temperature and salinity.

Quality Assurance (QA): The total integrated program for assuring the reliability of data. A system for integrating the quality planning, quality control, quality assessment, and quality improvement efforts to meet user requirements and defined standards of quality with a stated level of confidence.

Quality Control (QC): The overall system of technical activities for obtaining prescribed standards of performance in the monitoring and measurement process to meet user requirements.

Radially Averaged Fetch Distance: The average length of multiple fetch lines, which radiate from one point over a range (direction) with a relatively constant wind speed.

Recruitment: The residue of those larvae that have: (1) dispersed; (2) settled at the adult site; (3) made some final movements toward the adult habitat; (4) metamorphosed successfully, and (5) survived to be detected by the observer.

Reference Sediment: A whole sediment, collected near an area of concern, that is used as a point of comparison to assess sediment conditions exclusive of the material(s) or activities of interest. The reference sediment may be used as an indicator of localized sediment conditions exclusive of the specific pollutant of concern. Such sediment would be collected near the site of concern and would represent background concentrations.

Reference Site: The location from which reference sediment is obtained.

Region: U.S. Environmental Protection Agency administrative area.

Regulations: Administrative rules published in the Code of Federal Regulations (CFR) or Code of Maryland Regulations (COMAR).

Residence Time: Time required for the flow of water to replace the amount of water originally present in a given volume.

Rolling Surcharge: A rolling surcharge is used in conjunction with wick drains. The surcharge applies a load to the soil, creating excess pore pressure, which is relieved by the wick drains. The surcharge speeds up the consolidation process. The rolling portion of the term refers to the fact that the surcharge moves around the area of soil being consolidated. This is typically done when the area being surcharged is large and it is more economical to move a smaller surcharge over the site that provide a surcharge to the entire site at once.

Rotifers: Microscopic members of the Phylum Rotifera, many of which are planktonic.

Salinity Regime: A portion of an estuary distinguished by the amount of tidal influence and salinity of the water. The major salinity regimes are, from least saline to most saline:

- **Tidal Fresh** – Describes waters with salinity between 0 and 0.5 parts per thousand (ppt). These areas are at the extreme reach of tidal influence.
- **Oligohaline** – Describes waters with salinity between 0.5 and 5 ppt. These areas are typically in the upper portion of an estuary.
- **Mesohaline** – Describes waters with salinity between 5 and 18 ppt. These areas are typically in the middle portion of an estuary.
- **Polyhaline** – Describes waters with salinity between 18 and 30 ppt. These areas are typically in the lower portion of an estuary, where the ocean and estuary meet.

Sediment: Particulate organic and inorganic matter that settles and accumulates in a loose form on the bottom of a body of water or waterway. It may be chemically precipitated from solution, secreted by organisms, or transported from land by air, ice, or water, and deposited. Inorganic sediments on the bottom of the Bay include cobble, gravel, sand, silt, and clay. These materials are classified by grain-size.

Sediment Transport: The main natural or non-anthropogenic agencies by which sedimentary materials are moved are: gravity (gravity transport); running water (rivers and streams); ice (glaciers); wind; the sea (currents). Running water and wind are the most common transporting agents.

Sedimentation: The deposition of suspended sediment.

Sediment Quality Guidelines (SQG): Concentrations of chemical constituents in sediments that are used in order to differentiate sediments of little concern from those predicted to have adverse biological effects.

Semidiurnal Tide: Tides that occur twice daily; two high tides and two low tides occur each day.

Shallow Water: Water of such depth that surface waves are noticeably affected by bottom topography.

Shallow Water Habitat (SWH): Areas generally less than six ft in depth where light penetration is sufficient to support SAV.

Shoal: An area of submerged accumulation of sediments in shallow or deep water.

Shore: The narrow strip of land in immediate contact with the sea.

Shoreline: The intersection of a specified plane of water with the shore or beach (typically taken as mean high water or mean higher high water).

Side-scan Sonar: A sonar that scans the ocean floor to the side of a ship's track and is used especially for mapping the ocean bottom.

Silt: Sediment particles with a grain size between 0.004 mm and 0.062 mm, i.e. coarser than clay particles but finer than sand.

Single Dipolar Anomaly: An irregularity from one source with a distinctive magnetic signature that displays both a rise and fall above and below the ambient field. The dipole in the dipolar signature is usually aligned along the axis of the magnetic field and the negative peak of the anomaly falls nearest the North Pole. In comparison, multi-component anomalies, or those composed of both dipolar and monopolar magnetic perturbations are typically more consistent with the multiple individual iron materials comprising the debris patterns associated with shipwrecks.

Soil Classification: The systematic arrangement of soils into groups or categories on the basis of their characteristics.

Sonar: A method or device for detecting and locating objects especially underwater by means of sound waves sent out to be reflected by the objects; *also:* a device for detecting the presence of a vessel (as a submarine) by the sound it emits in water.

Sound: A vibratory disturbance created by a vibrating object, which, when transmitted by longitudinal pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

Spatial Dominance: The prevalent occupation of a space in a landscape by an object(s) or landscape element.

Spring Bloom: Sudden proliferation of phytoplankton that occurs when the critical depth (as determined by the penetration of sunlight) exceeds the depth of the mixed, stable surface layer (as determined by the pycnocline).

Spring Tidal Range: Has the maximum range and occurs during the full moon when the earth is between the moon and the sun, and new moon when the moon is between the earth and the sun.

Spring Tide: A tide that occurs at or near the time of new or full moon and which rises highest and falls lowest from the mean sea level.

Standard Operating Procedure (SOP): A written document which details an operation, analysis, or action whose mechanisms are thoroughly prescribed and which is commonly accepted as the method for performing certain routine or repetitive tasks.

Storm Surge: A rise above normal water level on the open coast due to the action of wind stress on the water surface or atmospheric pressure differentials associated with storm events.

Stratification: Vertical arrangement in layers, e.g. distinct temperature bands within a water body.

Sub-bottom Profiler: A sub-bottom profiler is a piece of equipment that emits lower frequency sound waves that can penetrate up to 50 meters into the seafloor, depending on seafloor type and water conditions (e.g., turbidity, salinity).

Submerged Aquatic Vegetation (SAV): Vascular plants that grow completely underwater are referred to as SAV. Light penetration, turbidity, water depth, salinity (mesohaline species require 5 to 18 ppt), and nutrient availability influence the distribution, growth and viability of SAV. SAV normally occurs in water depths to 10 feet, although SAV is more likely to be found in depths of three to five feet or less in the Bay because of increased turbidity levels (Batiuk et. al, 1992).

Substrate: Surface on which a sessile organism lives and grows. The substrate may simply provide structural support, or may provide water and nutrients. A substrate may be inorganic, such as rock or soil, or it may be organic, such as wood.

Threshold Effects Level (TEL): Concentrations below which a contaminant will rarely induce adverse biological effects.

Tidal Datum: The plane or level to which soundings, elevations, or tide heights are referred.

Tidal Day: The time of the rotation of the Earth with respect to the Moon, or the interval between two successive upper transits of the Moon over the meridian of a place, approximately 24.84 solar days.

Tidal Range: The difference in height between consecutive high and low (or higher high and lower low) waters.

Tide: Periodic rise and fall of the ocean and atmosphere, caused by the gravitational attraction of the moon and sun acting on the earth.

TMDLs: "Total Maximum Daily Load" or TMDL. A TMDL defines the pollutant load that a water body can assimilate without causing violations of water quality standards, and allocates the loading between contributing point sources and non-point source categories.

Toe Dike: A trapezoidal rock section that extends outward from the armored dike slopes (at 3H:1V) from the Bay bottom to approximately MLLW.

Topography: The configuration of a surface, including its relief and the positions of its streams, roads, buildings, etc.

Total Organic Carbon (TOC): The sum of all organic carbon compounds in water.

Total Suspended Solids (TSS): Organic or inorganic particles that are suspended in water; includes sand, silt, and clay particles as well as biological material.

Tributyltin: Compounds that belong to a group known as the organotins. Tributyltins are manufactured compounds that have no counterparts in nature. They are extremely toxic over a broad spectrum.

Trophic Level: Layer in the food chain in where one group of organisms serves as the source of nutrition of another group of animals. Primary produces constituent the first trophic level, herbivores the second, and carnivores the third, and highest, trophic level.

Trot Lining: A method of catching fish that involves a long line, resting on the bottom and anchored at both ends, to which a series of baits are attached at intervals of two to six feet. The baits are attached to the main line by simple slipknots or by shorter lines called dropper lines.

Turbidity: Cloudiness in the water column created by suspended particles, algae, or other materials; high turbidity reduces the amount of light that penetrates into the water column and, therefore, high turbidity can be harmful to aquatic life.

Vertical Stratification: Showing distinct vertical layers.

Volatile Organic Compound: An organic compound that evaporates readily at atmospheric temperatures.

Water Quality Certification: A state certification, pursuant to Section 401 of the Clean Water Act, that the proposed discharge of dredged material will comply with the applicable provisions of Sections 301, 303, 306, and 307 of the Federal Clean Water Act and relevant State laws.

Water Quality Criteria: A constituent concentration or narrative statement representing a quality of water that supports a particular use. When criteria are met, water quality will generally protect the designated area. See **acute water quality criteria, chronic water quality criteria**.

Water Quality Standard: A law or regulation that consists of the beneficial designated use or uses of a water body, the numeric and narrative water quality criteria that are necessary to protect the use or uses of that particular water body, and an anti-degradation statement.

Wave Climate: The combination of waves of different heights, periods, and directions.

Wave Crest: The highest point on a wave.

Wave Direction: The direction from which a wave approaches.

Wave Height: The vertical distance between a crest and the preceding trough.

Wave Length: The horizontal distance between similar points on two successive waves measured perpendicular to the wave crests.

Wave Period: The time for a wave crest to traverse a distance equal to one wavelength.

Wave Spectrum: The range of waves that comprise a sea state, which have varying heights and periods ranging from relatively long waves to short ripples.

Wick Drains: A wick drain is a series of plastic tubes surrounded by a permeable membrane. They are inserted into a soil medium to relieve pore pressures and provide a path for water to escape. This release of water allows the soil medium to consolidate. Wick drains are typically used to consolidate soils to create geotechnically suitable foundations.

Wind Rose: Diagram showing the long-term distribution of wind speed and direction.

Young-of-the-year: All of the fish of a species younger than one year of age. Usually scientists assign an arbitrary "birth date" to all fish of a species hatched over a two or three month period in one year. The fish are then assigned to Age 1 status on that birth date. By convention, this is usually January 1.

Zooplankton: A community of floating, often microscopic animals that inhabit aquatic environments. Unlike phytoplankton, zooplankton cannot produce their own food, and so are consumers.