

**APPENDIX D**  
**GLOSSARY TERMS**

**Abiotic**—refers to nonliving

**Acoustic scanning**—see side-scan sonar

**Acoustic wave log**—a technique based on the fact that the reservoir rock and fluid filled pores constitute an elastic system. It is primarily used for identification of porosity, cement evaluation, mechanical properties, and formation velocities for seismic studies of the sea floor. Also referred to as the sonic log

**Advection**—the differential motion within a fluid; changes in properties (e.g., temperature, salinity) that take place in the presence of horizontal or vertical flows of seawater (i.e., currents) represent advective changes

**Air gun**—a device that releases compressed air into the water column, creating an acoustical energy pulse with the purpose of penetrating the sea floor

**Alternative energy**—energy derived from other than what are generally considered conventional sources of energy (e.g., fossil fuels). Possible alternative energy sources include, wind, solar, biomass, wave, ocean current, hydrogen, and tidal energy

**Altitude**—the vertical elevation of an object above a surface (as sea level or land) of a planet or natural satellite

**Ambient noise**—environmental background noise composed of contributions from various sources at both near and far distances

**Amphibious**—capable of living on land or in water

**Anthropogenic**—describing a phenomenon or condition created, directly or indirectly, as a result of effects, processes, objects, or materials that are derived from human activities, as opposed to those occurring in natural environments without human influences

**Anti-cyclonic**—clockwise circulation in the Northern Hemisphere and counterclockwise circulation in the Southern Hemisphere; in oceanography, synonymous with warm-core ring

**Artificial reef**—a human-made, reef habitat (sunken ships, trains, tanks, concrete igloos, rubble) created in the navigable waters of the U.S. or in waters overlying the continental shelf to attract aquatic life

**Auditory brain stem (ABR) response**—an electrical signal evoked from the brainstem of a human or other mammal by the presentation of a sound such as a click

**Auditory threshold**—the lowest intensity at which a sound may be heard

**Autonomous recording unit**—a self-contained audio recording device that is deployed in marine or terrestrial environments for sound monitoring. It typically consists of several components: a microphone or hydrophone, an amplifier and associated digital electronics, and a software digital storage device

**Avian**—of, relating to, or derived from birds

**Avifauna**—the birds or the kinds of birds of a region

**Avoidance response**—a form of escape behavior present in animals in which the subject evades an aversive event

**Baleen whale**—any whale of the suborder Mysticeti; characterized by presence of baleen in the upper jaw

**Barometric pressure**—the pressure of the atmosphere usually expressed in terms of the height of a column of mercury

**Barrier effect**—the disruption of migration by a condition (such as a wind farm) that causes the migrating animal to divert from its normal route to avoid the condition

**Barrier islands**—long, broad, sandy islands lying parallel to a shore that is built up by the action of waves, currents, and winds and that protects the shore from the effects of the ocean

**Bathymetry**—refers to the topography of the ocean floor; study and mapping of the ocean depths

**Bedform**—a depositional feature on the bed of an river or other body of flowing water that is formed by the movement of the bed material due to the flow

**Benthic**—in, on, or near the ocean floor; the term is used irrespective of whether the sea is shallow or deep

**Benthos**—the collection of organisms that are found in, on, or are attached to the ocean bottom substrate (e.g., invertebrates, bivalves)

**“Bigeye” binocular**—25x150 power Fujinon binocular mounted on the port and starboard sides of the vessel during line transect shipboard surveys for marine mammals and sea turtles

**Biomass**—the amount of living matter per unit of water surface or water volume

**Biotic**—pertaining to life or living organisms

**Cable-tool drilling**—uses rigs that raise and drop a drill string with a heavy carbide-tipped drilling bit that chisels through the rock by finely pulverizing the subsurface materials

**Cetacean**—an individual of the order Cetacea, which includes whales, dolphins, and porpoises

**Cichlids**—are fishes from the family Cichlidae in the order Perciformes

**Cochlea**—the organ of the inner ear that converts mechanical vibrations into electrical impulses for the purpose of hearing

**Conspecific**—refers to a member of the same species, and in many cases, the same age or even sex

**Coral reef**—is a massive, wave-resistant structure built largely by colonial, stony coral via deposition of calcium carbonate; forms habitat for a variety of marine animals; only formed under specific environmental conditions and locations

**Craton**—a stable relatively immobile area of the earth's crust that forms the nuclear mass of a continent or the central basin of an ocean

**Cretaceous**—of, relating to, or being the last period of the Mesozoic era (142 to 65 million years ago) characterized by continued dominance of reptiles, emergent dominance of angiosperms, diversification of mammals, and the extinction of many types of organisms at the close of the period

**Criteria pollutants**—a group of common air pollutants whose presence in the environment is regulated by the U.S. Environmental Protection Agency (EPA) on the basis of health and/or environmental effects

**Crustacean**—any chiefly aquatic arthropod of the class Crustacea, typically having the body covered with a hard shell or crust, including the lobsters, shrimps, crabs, and barnacles

**Cumulative impacts**—Impacts on the environment that result from the incremental effect of an action when added to other past, present, and reasonably foreseeable future actions regardless of by whom the action is undertaken

**Cyclonic**—refers to the counterclockwise circulation in the Northern Hemisphere or clockwise in the Southern Hemisphere; in oceanography, synonymous with cold-core ring

**Decibel (dB)**—a logarithmic measure of sound strength; it is a ratio of intensity (pressure) at a reference range compared with a reference level; in air, the reference pressure is 20  $\mu$ Pa and the reference range is 1 m, while for underwater sound, the reference is 1  $\mu$ Pa and the reference range is also at 1 m

**Deltaic deposits**—sedimentary deposits in a river delta

**Demersal**—refers to fish that live close to or on the seafloor, such as cod and hake

**Deposition**—an act or process of depositing

**Detection thresholds**—the lowest level at which a stimulus (sound) can be detected

**Detritus**—loose material (as rock fragments or organic particles) that results directly from disintegration

**Displacement**—to move something from its natural environment

**Diurnal tides (daily tides)**—one high water and one low water in each lunar day (tidal period of about 24.8 hours)

**Double saw-tooth pattern**—refers to survey design; describes the zig-zag pattern of randomly-generated tracklines designed to maximize coverage of the Study Area

**Downwelling**—downward movement or sinking of surface water towards the ocean bottom; may be caused by convergent currents or density differences

**Dredging**—an excavation activity or operation with the purpose of gathering bottom sediments or scraping and removing solids from the seafloor. This method is used for harvesting bivalve mollusks such as oysters, clams, and scallops from the seabed

**Duty cycle**—the relationship between the active (operating) time and the inactive (resting) time of an equipment or machine

**Ebb-tidal delta**—ebb tide: refers to outgoing or a falling tide

**Eiders**—large sea ducks in the genus *Somateria* much valued for the fine, soft down of the females

**El Niño**—refers to the wind-driven reversal of the Pacific equatorial currents resulting in the movement of warm water towards the coasts of the Americas, considered a natural cyclical atmospheric/oceanic phenomenon; El Niño is often referred to as a warm phase or El Niño-Southern Oscillation, or "ENSO"

**El Niño-Southern Oscillation (ENSO)**—see "El Niño (warm phase) events"

**Elasmobranch**—fishes of the class Chondrichthyes characterized by having a cartilaginous skeleton; includes sharks, skates, and rays

**Electrical service platform (ESP)**—a stationary structure located approximately in the center of a wind farm. It is the common electrical interconnection point for all of the turbines in the array. The ESP provides electrical protection and voltage step-up transformers

**Electromagnetic fields (EMF)**—the field of energy resulting from the movement of alternating electrical current along the path of a conductor, composed of both electrical and magnetic components and existing in the immediate vicinity of, and surrounding, the electrical conductor. EMF exists in both high-voltage electrical transmission power lines and in low-voltage electric conductors in homes and appliances

**Entrained**—incidental trapping of fish and other aquatic organisms (i.e., zooplankton) in the water

**Eocene**—of, relating to, or being an epoch of the Tertiary between the Paleocene and the Oligocene (56 to 34 million years ago) or the corresponding series of rocks

**Epifauna**—refers to animals living on the surface of the ocean floor; any encrusting fauna

**Essential Fish Habitat (EFH)**—those habitats necessary to fish for spawning, breeding, feeding, or growth to maturity, designated by the NMFS or fishery management councils, as authorized by the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) and amended by the Sustainable Fisheries Act (SFA)

**Eustatic**—relating to or characterized by worldwide change of sea level

**Exclusive Economic Zone (EEZ)**—all waters from the low-tide line outwards to 200 NM (except for those that are close together, i.e., Mediterranean countries) in which the inner boundary of that zone is a line coterminous with the seaward boundary of each of the coastal states; the country has the power to manage all natural resources

**Extratropical storm**—A synoptic scale low pressure system whose primary energy source is baroclinic (i.e., nor'easters)

**Facies**—accrual of deposits that demonstrate specific characteristics and grades laterally into other sedimentary accumulations that formed concurrently but exhibit different characteristics; can range in size from a few millimeters to hundreds of meters thick

**Fauna**—animals of a given region

**Feldspar**—any of a group of crystalline minerals that consist of aluminum silicates with either potassium, sodium, calcium, or barium and that are an essential constituent of nearly all crystalline rocks

**Fish Aggregating Device (FAD)**—single or multiple floating structures that are connected to the ocean floor by ballast or anchors; device used to attract fish

**Flora**—the plant species of a given region

**Fluvial**—produced by the action of a stream

**Forebulge**—uplift at the front edge of a glacier caused by flexing of the crust

**Frequency**—cycles per second; the number of cycles completed per unit of time of a wave/oscillation. Sound is measured in cycles per second or frequency, called Hertz

**Freshet**—a great rise or overflowing of a stream caused by heavy rains or melted snow

**Front**—a boundary between two water or air masses that have different densities; water density differences are caused by differences in temperature or salinity

**Geologic**—pertaining to, or based on the scientific study of the earth's structure (geology)

**Geostrophic circulation**—a type of thermohaline circulation. See "Thermohaline circulation"

**Glacial maximum**—the point of an ice cap's maximum advance

**Glacial rebound**—the rise or fall of land masses that were depressed by the huge weight of ice sheets during the last glacial period

**Glacial**—of, relating to, or being any of those parts of geologic time from Precambrian onward when a much larger portion of the earth was covered by glaciers than at present

**Glacioeustasy**—changes in sea level due to the storage or release of water from glacier ice

**Glauconite**—a mineral consisting of a dull green earthy iron potassium silicate occurring in greensand

**Gravity foundation**—a flat base used to support a turbine tower. It is usually made of concrete or a steel case filled with heavy-weight material such as stones, boulders, and rocks to hold the base in place

**Ground truth**—refers to information that is collected "on location." In remote sensing, this is especially important in order to relate image data to real features and materials on the ground. The collection of ground-truth data enables calibration of remote-sensing data, and aids in the interpretation and analysis of what is being sensed

**Guild**—a group of organisms that use the same ecological resource in a similar way

**Gulf Stream**—warm current in North Atlantic flowing from Gulf of Mexico NE along United States coast to Nantucket & thence eastward

**Gust**—a sudden brief rush of wind

**Habitat**—is the area where an organism is found temporarily or permanently; it provides the essentials for survival: sustenance, food, water, shelter, and space

**Hard bottom**—area of the seafloor, usually on the continental shelf, associated with hard substrate such as outcroppings of limestone or sandstone that may serve as attachment locations for organisms such as corals, sponges, and other invertebrates or algae

**Hertz**—the unit of frequency measurement, representing cycles per second

**Heterogeneity**—the quality of being diverse and not comparable in kind

**Highstand**—relatively high sea level

**Hinge line**—boundary between a stable region and one undergoing relative vertical movement

**Holocene**—of, relating to, or being the present or post-Pleistocene geologic epoch; began approximately 12,000 years ago

**Holocentrids**—ray-finned fish, belonging to the order Beryciformes, typically known as squirrelfish

**Homogeneity**—the quality of being similar or comparable in kind or nature

**Horizontal directional drilling**—is a steerable, trenchless method of installing underground pipes, conduits and cables in a shallow arc along a prescribed bore path with minimal surface impact

**Hudson apron**—a plateau-like feature between the Hudson and Toms canyons

**Hurricane**—A tropical cyclone in which the maximum 1-minute sustained surface wind is 64 knots (74 mph) or greater

**Hurricane return period**—the frequency at which a certain intensity or category of hurricane can be expected within 75 nm (86 statute miles) of a given location. Example: a return period of 20 years for a Category 3 or greater hurricane means that on average during the previous 100 years, a Category 3 or greater hurricane passed within 75 nm (86 miles) of that location about five times

**Hydraulic vibratory pile extractor**—a vibratory hammer used to extract a pile; extraction is commonly used to recover steel "H" piles used in temporary foundation shoring. Hydraulic fluid is supplied to the driver by a diesel engine powered pump mounted in a trailer or van and connected to the driver head through a set of long hoses

**Hydrodynamic regime**—the pattern of water movement around an object

**Hydrography**—the science of measuring and describing the surface waters

**Hydrophone**—a transducer used for detecting underwater sound pressures; an underwater microphone

**Hypoxic**—waters with a low oxygen concentration, usually less than two parts per million; hypoxic waters are considered oxygen-depleted

**Ichthyofauna**—refers to fish species found in a particular geographical area

**Ichthyoplankton**—fish eggs and larvae

**Infauna**—invertebrates found within the sediment of the seafloor

**Infrasonic**—sound at frequencies too low to be audible to humans, generally below 20 Hz

**Inlet**—a narrow body of water between islands or leading inland from a larger body of water, often leading to an enclosed body of water, such as a sound, bay, lagoon or marsh; a connection between a bay and the ocean

**Intense (major hurricanes)**—those reaching category three or higher

**Interglacial**—a warm period between glacial epochs

**Isobath**—refers to the bathymetric contour of equal depth; usually shown as a line linking points of the same depth

**Isostasy**—equilibrium of lithospheric rock units

**Isotherm**—refers to the contour of equal temperature; usually shown as a line linking points of the same temperature

**Jack-up barge**—a floating barge with long support legs that can be raised or lowered. It is towed (or self propelled) to a location with its legs up and the barge section floating on the water. Upon arrival, the legs are jacked down onto the seafloor. The jacking system is then used to raise the entire barge above the water so that wave, tidal and current loading acts only on the legs and not on the barge hull

**Kilohertz**—1,000 Hertz; see Hertz

**La Niña**—is an oceanographic event when ocean temperatures in the eastern equatorial Pacific are unusually cold; it is essentially the opposite of the El Niño phenomenon; La Niña sometimes is referred to as the cold phase of an El Niño Southern Oscillation event (ENSO)

**Liquefaction**—loss of strength of loosely-packed, waterlogged sediments in response to strong shaking

**Lithofacies**—the rock record of any particular sedimentary environment, including both physical and organic characteristics

**Lowstand**—relatively low sea level

**Macrofauna**—refers to small to moderate sized invertebrates found on or in bottom sediments; visible with the naked eye

**Magnetometer surveys**—a type of geophysical survey that measures the irregularities in the magnetic field of a given area

**Masking**—an acoustic term that pertains to noise that cancels out a sound of interest; e.g., vessel engine noise can mask the calls of some whales because they are produced in the same frequency range

**Meridional shift**—a shift of the winds to parallel a line of longitude

**Meroplankton**—portion of the zooplankton spends only part of its life as plankton; include the eggs, larval and juvenile stages of many organisms that spend most of their lives as either free swimmers (such as fish) or bottom dwellers (such as crabs and starfish)

**Mesoscale**—of intermediate size relating to a meteorological phenomenon approximately 10 to 1,000 kilometers in horizontal extent

**Meteorological**—the atmospheric phenomena and weather of a region

**Microfauna**—minute animals; especially those invisible to the naked eye

**Migration**—a periodic movement between one habitat and one or more other habitats involving either the entire or significant component of an animal population; this adaptation allows an animal to monopolize areas where favorable environmental conditions exist for feeding, breeding, and/or other phases of the animals' life history

**Mixed tides**—have characteristics of both diurnal and semi-diurnal tides with successive high and/or low tides (with significantly different heights) along with diurnal periods for a few days per month

**Monopile**—a long, steel tube driven into the seafloor 10 to 20 meters (33 to 66 feet) to support a wind turbine

**Mysticeti**—suborder of cetaceans comprised of the baleen whales

**Nacelle**—the housing of a wind turbine that protects the major components (e.g., generator and gear box)

**Nautical mile (NM)**—a distance unit used in the marine environment that is equal to one minute of latitude or 1.85 km

**Neap tides**—occurs when the sun and moon are nearest to 90° to each other giving the resultant force a minimum value

**Neutral years**—occur when the SST index is not more than 0.5°C above or below average

**Nocturnal**—applied to events that occur during nighttime hours

**Non-frontal**—weather events not associated with a front. See "Front"

**North Atlantic Oscillation (NAO)**—an alteration in the intensity of the atmospheric pressure difference between the semi-permanent high-pressure center over the Azores islands off Portugal and the subpolar low-pressure center over Iceland

**North Atlantic Oscillation (NAO) index**—variability in the NAO is calculated as an index, which is indicative of the mean winter atmospheric pressure difference between the low- and high-pressure centers

**Northeasterlies (nor'easters)**—prevailing winds moving from the northeast to the southwest

**Northwesterlies**—prevailing winds moving from the northwest to the southeast

**Odontoceti**—suborder of cetaceans comprised of toothed whales (e.g., beaked whales, dolphins, porpoises, sperm whale)

**Onshore breezes (“sea breezes”)**—small scale wind pattern events that form perpendicular to the coast and directly influence temperatures experienced. Onshore breezes are caused by warm continental air rising and moving offshore while cooler oceanic air moves onshore

**Outer Continental Shelf (OCS)**—the farthest of 200 nautical miles seaward of the baseline or, if the continental shelf that can be shown to exceed 200 nautical miles, a distance not greater than a line 100 nautical miles from the 2,500-meter isobath or a line 350 nautical miles from the baseline

**Paleochannel**—deposits of unconsolidated sediments or semi-consolidated sedimentary rocks deposited in ancient, currently inactive river and stream channel systems

**Passive Acoustic Monitoring (PAM)**—an acoustic tool where a hydrophone or microphone is used to capture sounds from various sources in a given environment

**Passive margin**—a continental margin that is not affected by rifting, subduction, transform faulting, or other large-scale tectonic processes, but instead forms a shelf that accumulated sediments

**Peak particle velocity**—maximum instantaneous velocity experienced by the particles of a medium when set into transient vibratory motion. This can be derived as the magnitude of the vector sum of three orthogonal components and is measured in cm/s

**Pelagic**—the open ocean; the primary division or zone in the open ocean that encompasses the entire water column and is subdivided into the neritic (shallow) and oceanic (deep) zones

**Permanent threshold shift**—an increase in the threshold of hearing that results in permanent damage to an individual’s hearing capability. This may occur as a result of long-term or extremely loud exposure to noise

**Phytoplankton**—single-celled organisms, at the base of the marine food chain, similar to plants in that use sunlight and chlorophyll to photosynthesize

**Pile driving**—the act of forcing piles, either via impact hammering or vibration, into soil to provide foundation support for buildings or other structures

**Pinniped**—member of the suborder Pinnipedia; includes seals, sea lions, fur seals, and walruses

**Pleistocene**—of, relating to, or being the earlier epoch of the Quaternary (2.588 million to 12,000 years ago) or the corresponding series of rocks

**Pliocene**—of, relating to, or being the latest epoch of the Tertiary (5.332 million to 2.588 million years ago) or the corresponding series of rocks

**Population-level effects**—impacts that affect the survival of a group of individuals of the same species occupying the same area

**Prey**—an animal that is hunted, pursued, and caught for food (diet)

**Primary production**—organic matter synthesized by organisms from inorganic substances

**Procellariiformes**—an order of seabirds that comprises four families: the albatrosses, procellariids, storm-petrels and diving petrels

**Progradation**—seaward buildup of a beach, delta, or fan by nearshore deposition of sediments either transported by a river or by accumulation of sediment through wave motion or longshore drift

**Pycnocline**—refers to a zone of marked water density gradient that is usually associated with depth

**Quaternary**—of, relating to, or being the geological period from the end of the Tertiary (2.588 ± 0.005 million years ago) to the present time or the corresponding system of rocks

**Ravinement**—erosional surface that tends to occur wherever the landward edge of the sea rises over an underlying sedimentary surface

**Reflector (seismic)**—a subsurface cross-section that is constructed by seismic data showing a distinctive type of sediment geometry produced by sea level variations; used to evaluate stratigraphic sequences

**Rotor swept zone**—area of the circle “swept” by the blades of a wind farm in square meters or square feet

**Saffir/Simpson Hurricane Scale (SSHS)**—A scale on a 1-5 rating based on the hurricane's present intensity. 1) 64-82 kt (74-95 mph); 2) 83-95 kt (96-110 mph); 3) 96-113 kt (111-130 mph); 4) 114-135 kt (131-155 mph); 5) greater than 135 kt (155 mph)

**Salmonids**—soft-finned fishes of cold and temperate waters including salmon and trout

**Sciaenids**—a family of fish commonly called drums, croakers, or hardheads for the repetitive throbbing or drumming sounds they make

**Scour**—the rapid erosion of sediment caused by the movement of water

**Sea level transgression**—a geologic event during which sea level rises relative to the land and the shoreline moves toward higher ground, resulting in flooding. Transgressions can be caused either by the land sinking or the ocean basins filling with water (or decreasing in capacity)

**Sea surface temperature (SST)**—refers to the temperature of the uppermost layer of seawater (approximately 0.5 m deep). Measured over large spatial scales by remote sensing satellite-based detectors and at point locations by moored buoys or ships

**Sediment**—materials that sink to the bottom of a body of water after being deposited by wind, water, or glaciers

**Seismic surveys**—a geophysical exploration method whereby subsurface sediment layers can be mapped and analyzed based on the time taken for energy reflected from these layers to return to surface

**Seismogram**—a record of the ground motion at a measuring station as a function of time. Seismograms typically record motions in three cartesian axes (x, y, and z), with the z axis perpendicular to the Earth's surface and the x- and y- axes parallel to the surface. The energy measured in a seismogram may result from an earthquake or from some other source, such as an explosion

**Semi-diurnal tides (twice daily)**—two high and two low waters in the same interval (tidal period of about 12.4 hours)

**Sessile**—is terminology used to describe an animal that is attached to something rather than freely moving

**Shelf break (continental)**—refers to the region where the slope of the seabed rapidly changes from gently sloping on the continental shelf to steeply sloping on the continental slope; the world-wide average water depth at the shelf break is 155 m, and on average, the shelf break usually occurs between 100 to 200 m

**Shoal**—a sandbank or sandbar that makes the water shallow

**Shoreface sand ridge**—shelf sand bars created by longshore currents carrying sand along the shoreface and depositing it in submerged bars parallel to the shore

**Shoreface-attached sand ridge**—the initial development of a sand ridge field; probably developed as sand is deposited in ebb tide deltas of barrier systems. The inlets open, migrate and then close with ebb tidal deltas acting as point sources for sand

**Shoreface-detached sand ridge**—ridge formed in response to storm-generated currents and barrier islands. They slowly migrate offshore and down coast in the prevailing direction of storm flow and the eroding shoreface retreats out from under them. As they have detached from the shoreface they continued to evolve in response to storm wave surge and water drift currents

**Side-scan sonar**—a geophysical instrument that uses sound waves reflected off the seafloor to image the areal extent of different bottom types

**Sirenia**—the order of marine mammals that consists of manatees and the dugong

**Sound exposure level**—standardized measure of a single sound event, expressed in A-weighted decibels, that takes into account all sound above a specified threshold set at least 10 decibels below the maximum level. All sound energy in the event is integrated over one second

**Sound pressure level**—the ratio of the absolute sound pressure over a reference pressure and implies a decibel measure

**Sound propagation**—sound is a mechanical vibration that travels through matter as a waveform. Sound propagation is the movement of these waves through air, water, or other materials

**Southern Oscillation**—the atmospheric component of El Niño. It is an oscillation in air pressure between the tropical eastern and the western Pacific Ocean waters

**Southern Oscillation Index (SOI)**—The SOI measures the strength of the Southern Oscillation. The SOI is computed from fluctuations in the surface air pressure difference between Tahiti and Darwin, Australia. El Niño episodes are associated with negative values of the SOI, meaning that the pressure at Tahiti is relatively low compared to Darwin

**Spawn**—the release of eggs and sperm during mating

**Spring tides**—occurs when the forces due to the sun and moon come into phase on the same side of the earth or both on opposite sides

**Storm surges**—the result of the frictional stress of strong winds blowing toward land and pushing up the water against the land

**Strandplain**—a broad stretch of sand along a shoreline with a surface displaying distinct parallel sand ridges alternating with shallow swales

**Strata**—parallel layers of sedimentary rock

**Stratigraphy**—the geographic and chronologic arrangement of strata; incorporates thickness, characteristics, sequence, age, and correlation of rocks

**Strip transect method**—“single saw-tooth” sample design was implemented for the small boat coastal survey. The starting location for each survey was randomly determined among two starting points (north end and south end) by the toss of a coin.

**Submerged aquatic vegetation**—plants that have adapted to living in aquatic environments

**Subsidence**—the sudden or gradual downward motion of the Earth’s surface with little or no horizontal displacement

**Substrate**—the material to which an organism is attached or in which it grows and lives; also, the underlying layer or substance

**Subtropical cyclone**—A non-frontal low pressure system that has characteristics of both tropical and extratropical cyclones. This system is typically an upper-level cold low with circulation extending to the surface layer and maximum sustained winds generally occurring at a radius of about 100 miles or more from the center. In comparison to tropical cyclones, such systems have a relatively broad zone of maximum winds that is located farther from the center, and typically have a less symmetric wind field and distribution of convection

**Subtropical depression**—A subtropical cyclone in which the maximum 1-minute sustained surface wind is 33 knots (38 mph) or less

**Subtropical storm**—A subtropical cyclone in which the maximum 1-minute sustained surface wind is 34 knots (39 mph) or more

**Surficial**—of or relating to a surface

**Temporal**—of or relating to time as distinguished from space

**Temporary threshold shift**—an increase in the threshold of hearing that results in temporary damage to an individual’s hearing capability; return to normal hearing ability is attained after a period of time

**Terrigenous**—shallow marine sediments consisting of material derived from the land surface

**Tertiary**—of, relating to, or being the first period of the Cenozoic era (65 million to 2.588 million years ago) or the corresponding system of rocks marked by the formation of high mountains (as the Alps, Caucasus, and Himalayas) and the dominance of mammals on land

**Thalweg**—the deepest continuous line along a channel

**Thermocline**—refers to a relatively narrow boundary layer of water where temperature decreases rapidly with depth; little water or solute exchange occurs across the thermocline which is maintained by solar heating of the upper water layers

**Thermohaline circulation**—the part of the large-scale ocean circulation that is driven by global density gradients created by surface heat and freshwater fluxes

**Triassic**—of, relating to, or being the earliest period of the Mesozoic era (about 250 to 200 million years ago) or the corresponding system of rocks marked by the first appearance of the dinosaurs

**Tripod foundation**—a steel frame with three to four legs driven 10 to 20 meters (33 to 66 feet) into the seafloor to support a turbine tower

**Trophic level**—refers to a step in the transfer of food or energy within a chain; an ecological term

**Tropical cyclone**—A warm-core, non-frontal synoptic-scale cyclone, originating over tropical or subtropical waters with organized deep convection and a closed surface wind circulation about a well-defined center

**Tropical depression**—A tropical cyclone in which the maximum 1-minute sustained surface wind is 33 knots (38 mph) or less

**Tropical storm**—A tropical cyclone in which the maximum 1-minute sustained surface wind ranges from 34 to 63 knots (39 to 73 mph) inclusive

**Turbidity**—a cloudy condition in water due to suspended silt or organic matter

**Turbine**—a device in which a stream of water or gas turns a bladed wheel, converting the kinetic energy of the flow into mechanical energy available from the turbine shaft. Turbines are considered the most economical means of turning large electrical generators. They are generally driven by steam, fuel vapor, water, or wind

**United Nations Convention on the Law of the Sea**—the international agreement that defines the rights and responsibilities of nations in their use of the world's oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources. Although the United States helped shape the Convention and its subsequent revisions, and though it signed the 1994 Agreement on Implementation, it has not ratified the Convention

**Upwelling**—movement of dense, cold, nutrient-rich water up from ocean depths to the surface

**Vibracore**—a coring technique which involves pushing a vibrating pipe into sediment and removing it with a core sample intact inside the pipe

**Vibratory**—vibratory hammer that propels a core barrel into the sub-bottom materials

**Vocalization**—a sound produced through an animal's respiratory system, which is emitted for auditory communication

**Westerlies**—wind currents blowing from the southwest between 30°N and 60°N in the northern hemisphere and from the northwest between 30°S and 60°S in the southern hemisphere

**Wind farm**—a group of wind turbines in the same location used for production of electric power (renewable/alternative energy)

**Wisconsinan stage**—a period of geologic time during the last glacial maximum (about 35,000 to 15,000 years before present)

**Zooplankton**—diverse group of non-photosynthesizing organisms that drift freely in the water or its surface; zooplankton are composed of a wide range of invertebrates, including larval forms of fish and shellfish