

IX. GLOSSARY OF TERMS

This glossary of terms is a compilation of previous glossaries presented by several publications (Williams and Thom 2001, Nightingale and Simenstad 2001, Komar 1998). It is provided to assist the reader with interpretation of technical terms. Some of these terms may not appear in the text of the BAS document but are provided for completeness.

ACCRETION - Natural accretion is the buildup of land, solely by the action of the forces of nature, on a beach by deposition of water- or airborne material. Artificial accretion is a similar buildup of land by reason of an act of man, such as the accretion formed by a groin, breakwater, or beach fill deposited by mechanical means.

AERIAL - Portion of a plant that remains above the soil surface, such as the leaves.

ALGAE - Simple plant form having no true roots, stems or leaves; ranging in size from microscopic, single-celled plants (microalgae) to seaweeds (macroalgae)

ALONGSHORE - Parallel to and near the shoreline. (LONGSHORE)

AMPHIPOD – Crustaceans in the Order Amphipoda, of subclass Malacostraca.

ANADROMOUS - Fish that reproduce in fresh water, but spend a portion of their life in salt water.

AQUATIC ECOSYSTEM - Bodies of water, including wetlands, that serve as the habitat for interrelated and interacting communities and populations of plants and animals.

ARMORING - Physical modifications to the shoreline implemented by man.

ASSEMBLAGE - The group of species generally associated with a given habitat type.

BACKFILL - Material used to fill behind a small structure such as a seawall or bulkhead. Also, the act of placing material behind a small structure such as a seawall or bulkhead.

BACKSHORE - Zone of beach lying between foreshore and coastline acted upon by waves only during severe storms.

BAITFISH - See forage fish.

BANK – A land surface above the ordinary high water line that adjoins a body of water

BAR - A submerged or emerged embankment of sand, gravel, or other unconsolidated material built on the sea floor in shallow water by waves and currents.

BATHYMETRY - The measurement of depths of water in oceans, seas, and lakes. Also, information derived from such measurements.

BEACH - The zone of unconsolidated material that is moved by waves, wind and tidal currents, extending landward to the coastline.

BEACH FACE - The sloping nearly planar section of the beach profile below the berm, which is normally exposed to the swash of waves

BEACH NOURISHMENT - The process of replenishing a BEACH by artificial means; e.g., by the deposition of dredged materials, also called beach replenishment or beach feeding.

BEACH PROFILE - A vertical cross section of a beach measured perpendicular to the shoreline.

BEACH RESTORATION AND ENHANCEMENT - The alteration or improvement of selected attributes of terrestrial and tidal shorelines or submerged shorelines for the purposes of stabilization, recreational enhancement, or aquatic habitat creation or restoration.

BENTHIC - Growing on or associated principally with the water bottom.

BERM (BEACH BERM) - The nearly horizontal portion at the beach or backshore formed by the deposition of sediments by waves. Some beaches have more than one berm at slightly different levels, separated by a scarp (not very frequent around Bainbridge Island).

BEST MANAGEMENT PRACTICE (BMP) - Method, activity, maintenance procedure, or other management practice for reducing the amount of pollution entering a water body. The term originated from the rules and regulations developed pursuant to Section 208 of the federal Clean Water Act (40 CFR 130).

BIOACCUMULATION - The accumulation of contaminants in the tissues of organisms through any route, including respiration, ingestion, or direct contact with contaminated water, sediment, or dredged material.

BIOTA - The animal and plant life of a region.

BIVALVE - An aquatic invertebrate animal of the class Bivalvia. Bivalves, such as clams and oysters, have two shells (valves) and most are filter feeders.

BLUFF – A high, steep bank or cliff.

BREAKER - A wave that has become so steep that the crest of the wave topples forward, moving faster than the main body of the wave.

BREAKER ZONE - Zone of shoreline where waves break.

BREAKWATER - Structure protecting shore area, harbor, anchorage, or basin from waves. See **JETTY**.

BUFFER - A strip of land that is designed and designated to permanently remain vegetated in an undisturbed and natural condition to protect an adjacent aquatic or wetland site from impacts

BULKHEAD - Structure or partition built to protect the shoreline from wave erosion. It is normally vertical or consists of a series of vertical sections stepped back from the water. A bulkhead is ordinarily built parallel or nearly parallel to the shoreline. See also **SEAWALL**, **RIPRAP**.

CAPPING - Covering up of contaminated sediment in order to prevent toxic release into the environment.

CHANNEL - A natural or artificial waterway of perceptible extent which either periodically or continuously contains moving water, or which forms a connecting link between two bodies of water.

COAST - A strip of land of indefinite length and width (may be tens of kilometers) that extends from the shoreline inland to the first major change in terrain features.

COASTAL PROCESSES - Collective term covering the action of natural forces on the shoreline, and the nearshore seabed.

COASTLINE - (1) Technically, the line that forms the boundary between the coast and the shore. (2) Commonly, the line that forms the boundary between land and the water. (3) The line where terrestrial processes give way to marine processes, tidal current, wind waves, etc.

COASTAL ZONE - Includes coastal waters and the adjacent shorelands designated by a State as being included within its approved coastal zone management program. The coastal zone may include open waters, estuaries, bays, inlets, lagoons, marshes, swamps, mangroves, beaches, dunes, bluffs, and coastal uplands. Coastal-zone uses can include housing, recreation, wildlife habitat, resource extraction, fishing, aquaculture, transportation, energy generation, commercial development, and waste disposal

COMMUNITY - Association of plants and/or animals in a given area or region in which various species are more or less dependent upon each other.

CONTROLLING FACTOR – Physical processes or environmental conditions that control local habitat structure and composition, including where habitat occurs and how much is present (see Williams and Thom 2001)

COPEPOD – Crustacean in the subclass Copepoda; includes both pelagic (Calanoida, Cyclopoda) and benthic/epibenthic (Harpacticoida).

CREST - The seaward limit of a berm. Also, the highest part of a wave.

CROSS-SHORE – Movement in a direction perpendicular to the shoreline, up or down the **BEACH PROFILE**.

CUMULATIVE EFFECTS - The combined environmental impacts that accrue over time and space from a series of similar or related individual actions, contaminants, or projects. Although each action may seem to have a negligible effect, the combined effect can be significant.

CURRENT - A flow of water.

DEMERSAL - Pertaining to an organism, such as a fish, living close to or on the bottom of a body of water; describing the habitat close to or on the bottom

DENSITY - The number of organisms per unit of area or volume

DEPOSITION - The deposit of sediment in an area through natural means such as wave action or currents; may also be done by man through mechanical means.

DESSICATION - Critical loss of fluids; drying out.

DIFFRACTION – The phenomenon by which energy is transmitted laterally along a wave crest.

DISCHARGE - The release of wastewater or contaminants to the environment. A direct discharge of wastewater flows directly into surface waters while an indirect discharge of wastewater enters a sewer system.

DISTURBANCE - Any natural or man-caused impact to an ecosystem.

DOWNDRIFT - The direction of predominant movement of littoral materials.

DRAFT - The vertical distance on a vessel from the waterline to the bottom of the keel of a boat.

DREDGE - To deepen by removing substrate material. Also, mechanical or hydraulic equipment used for excavation.

DRIFT CELL – A segment of shoreline along which littoral, or longshore, sediment movement occurs at noticeable rates. It allows for an uninterrupted movement, or drift, of beach materials. Each drift sector includes: a feed source that supplies the sediment, a driftway along which the sediment can move, an accretion terminal where the drift material is deposited, and boundaries that delineate the end of the drift sector. (Also called a **DRIFT CELL** or **LITTORAL CELL**).

ECOLOGICAL FUNCTIONS – The use and benefits of habitats to associated biological communities. Those natural physical, chemical, and biological processes that contribute to the proper functioning and maintenance of aquatic and terrestrial ecosystems.

ECOSYSTEM - The organization of all biotic and abiotic factors in an area, usually delineated by natural geographic barriers.

EELGRASS (HABITAT) - Intertidal and shallow subtidal, unconsolidated sand to mud shores that are colonized by aquatic, submerged rooted vascular angiosperms (seagrasses) of the genus *Zostera*. Two species predominate in the Pacific Northwest: *Zostera marina*, the endemic eelgrass, and *Z. japonica*, an introduced cogener

EMBANKMENT - Artificial bank such as a mound or dike, generally built to hold back water or to carry a roadway.

ENTRAINMENT - When an organism is trapped in the uptake of sediments and water being removed by dredging machinery.

EPIBENTHOS - Organisms that live on the surface of the bottom sediment. (EPIBENTHIC)

EROSION - The wearing away of land by natural forces, such as gravity and hydraulic action. On a beach, the carrying away of beach material by wave action, tidal currents, or littoral currents.

ESTUARY - Region near river mouth where freshwater mixes with saltwater; as defined seaward by the measurable dilution of seawater, upstream by the limit of tidal influence, and landward by MEAN HIGHER HIGH WATER, but including transition riparian and upland habitat margins (ESTUARINE)

FACE - The front or exposed area of a slope or structure.

FEEDER BLUFF OR EROSIONAL BLUFF - Any bluff or cliff experiencing periodic erosion from waves, sliding or slumping that, through natural transportation, contributes eroded earth, sand or gravel material via a driftway to an accretion shoreform. These natural sources of beach material are limited and vital for the long-term stability of driftways and accretion shoreforms (e.g., spits, bars, and hooks).

FETCH - The distance over unobstructed open water on which waves are generated by a wind having a constant direction and speed.

FIXED PIER - A fixed structure supported by pilings

FLOATING PIER (FLOATS) - A floating structure that is moored, anchored, or otherwise secured in the water, but which is not connected to the shoreline.

FORAGE FISH - Group of fish that are important to salmonids as food, such as herring, sandlance, and surfsmelt (BAITFISH).

GABION - Hollow cylinder or wire mesh basket filled with earth or stone, used to build REVETMENTS or BULKHEADS.

GEOMORPHOLOGY - The shape or form of a natural surface or object. Also, the study of the forms of the land surface and the processes producing them.

GROIN - A rigid structure built at an angle (usually perpendicular) from the shore to protect it from erosion or to trap sand. A groin may be further defined as permeable or impermeable depending on whether or not it is designed to pass sand through it.

GROUNDWATER - Underground water supplies, also called aquifers. Water soaks into the ground until it reaches a point where the ground is not permeable. Ground water usually then flows laterally toward a river or lake, or the ocean.

HABITAT - Interacting physical and biological factors that provide at least minimal conditions for one organism to live or for a group of organisms to occur together.

HABITAT FUNCTION – The use and benefits of physical and biological factors to associated biological communities or organisms (ECOLOGICAL FUNCTION, HABITAT).

HABITAT STRUCTURE – The physical composition of HABITAT (see Williams and Thom 2001). In aquatic systems, habitat structure, and its three-dimensional complexity, is manifested in many features (e.g., rocks, sediment, vegetation, woody debris, coral, oyster reefs) and increases available surface area, thereby resulting in potential for increased resource diversity for organisms.

HARBOR AREA - Area of navigable tidal waters as determined in Section 1 of Article 15 of the Washington State Constitution, which is forever reserved for landings, wharves, streets, and other conveniences of navigation and commerce.

HYDRAULIC - Of or pertaining to water.

HYDROLOGY - The dynamics of water movement through an area, including over and through land.

IMPACT - An action producing a significant causal effect of the whole or part of a given area.

IMPERVIOUS SURFACE - A surface that cannot be easily penetrated. For instance, rain does not readily penetrate asphalt or concrete pavement and groundwater cannot readily penetrate clay or bedrock.

IMPOUNDMENT - The retention or trapping of sediment in a location, either by natural or structural means.

INFAUNA - Organisms that live within the sediment underlying a body of water.

INSHORE – The zone of the beach profile extending seaward from the foreshore to just beyond the breaker zone.

INTERTIDAL – Pertaining to the area exposed at low tides and inundated at high tides; defined as the area between between MHHW and MLLW.

INVERTEBRATES - Animals that lack a bony or cartilaginous skeleton.

JETTY – A structure extending into a body of water and designed to prevent shoaling of a channel by littoral materials and to direct or confine the stream or tidal flow.

LAND USE - The way land is developed and used in terms of the types of activities allowed (agriculture, residences, industries, etc.) and the size of buildings and structures permitted. Certain types of pollution problems are often associated with particular land-use practices, such as sedimentation from construction activities.

LWD - Large woody debris.

LITTORAL - Of or pertaining to the shore

LONGSHORE CURRENT – The littoral current in the breaker zone moving essentially parallel to the shore.

LONGSHORE TRANSPORT – Transport of sedimentary material parallel to the shore.

MACROFAUNA - Animals that are of a visible size, generally with lengths equal to or larger than 0.5 mm (sometimes 1.0 mm).

MARINA - A public or private facility providing boat moorage space, fuel, or commercial services. Commercial services include, but are not limited to, overnight or live-aboard boating accommodations.

MACROINVERTEBRATES - Invertebrates that are of visible size, such as clams and worms.

MARINE - Water that contains high salt content (>30 ppt), as opposed to freshwater.

MARSH - An area of soft, wet, or periodically inundated land, generally treeless and usually characterized by grasses and other low growth.

MEAN HIGHER-HIGH WATER - The average of the measured higher-high water levels typically over a 19-yr period.

MEAN HIGH WATER - The average of all measured high water levels, including both the higher-high and lower-high recorded levels, typically over a 19-yr period.

MEAN LOW WATER - The average of all measured low water levels, including both the higher-low and lower-low recorded levels, typically over a 19-yr period.

MEAN LOWER-LOW WATER: The average height of the lower-low water levels, typically over a 19-yr period.

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.

MICROCLIMATE - The physicochemical conditions generally observed in a small, specific region such as an estuary or under a rock.

MIGRATION - The seasonal travel of an animal between habitats.

MIGRATORY CORRIDOR - The physical pathway through which animals migrate.

MUDFLAT - Low, unvegetated mud substrate that is flooded at high tide and uncovered at low tide.

NEARSHORE or NEARSHORE ZONE - In beach terminology an indefinite zone extending seaward from the shoreline well beyond the breaker zone.

NON-POINT SOURCE POLLUTION – Pollution that enters water from dispersed and uncontrolled sources (such as surface runoff) rather than through pipes. Non-point sources (e.g., forest practices, agricultural practices, on-site sewage disposal, and recreational boats) may contribute pathogens, suspended solids, and toxicants. While individual sources may seem insignificant, the cumulative effects of nonpoint source pollution can be significant.

NOURISHMENT - Process of replenishing a beach; naturally by longshore transport or artificially by deposition of imported material. (BEACH NOURISHMENT)

NUTRIENTS—essential chemicals needed by plants or animals for growth. If other physical and chemical conditions are optimal, excessive amounts of nutrients can lead to degradation of water quality by promoting excessive growth, accumulation, and subsequent decay of plants, especially algae. Some nutrients can be toxic to animals at high concentrations.

OFFSHORE – Term to describe the area seaward of the breaker zone, extending in a direction seaward from the shore.

ORDINARY HIGH WATER MARK: That mark that will be found by examining and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from the abutting upland, in respect to vegetation as that condition exists on June 1, 1971, as it may naturally change. Thereafter, or as it may change thereafter in accordance with permits issued by a local government or the department [of ecology]: provided, that in any area where the ordinary high water mark cannot be found, the ordinarily high water mark adjoining salt water shall be the line of mean higher high tide (WAC 173-27).

OSMOREGULATION – (1) Maintenance of optimal and constant osmotic pressure in the body of a living organism (Webster’s II New College Dictionary, 1999). (2) The maintenance of internal body fluids at a different osmotic pressure (usually higher) than that of the external aqueous environment; i.e., the salt concentration of internal body fluids is maintained at a different level from that of the environment.

OUTFALL - Structure extending into a body of water for the purpose of discharging an effluent (sewage, storm runoff, cooling water).

OUTMIGRATION - Refers to the act of anadromous salmonids when leaving freshwater and migrating to the sea for part of their life.

OVERWATER STRUCTURES - Man-made structures that extend over all or part of the surface of a body of water, such as a pier.

PAH – Polyaromatic hydrocarbons.

PHOTIC ZONE - The surface waters of the ocean that receive light. Includes the euphotic and disphotic zones. For Puget Sound / Bainbridge Island this is usually –10 m to –30 m MLLW depending on turbidity.

PIER - A fixed, pile-supported structure secured to the shoreline

PILE - Long, heavy timber or section of concrete or metal driven or jetted into earth or seabed for support or protection.

PILING - Group of piles.

PLANKTON - Suspended microorganisms with relatively little power of locomotion that drift in water and are subject to action of waves or currents.

POINT - A low profile beach promontory, generally of triangular shape whose apex extends seaward

POINT SOURCE POLLUTANT - Pollutants from a single point of conveyance such as a pipe. For example, the discharge from a sewage treatment plant or a factory outfall is a point source pollutant. See also **NON-POINT SOURCE POLLUTANT**, **POLLUTANT**.

POLLUTANT - A contaminant that adversely alters the physical, chemical or biological properties of the environment. The term includes pathogens, toxic metals, carcinogens, oxygen demanding materials, and all other harmful substances. With reference to non-point sources, the term is sometimes used to apply to contaminants released in low concentrations from many activities that collectively degrade water quality. As defined in the federal Clean Water Act, pollutant means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or

discarded equipment, rock, sand, cellar dirt, and industrial, municipal and agricultural waste discharged into water.

PRIORITY HABITAT—a habitat type with unique or significant value to one or more species. An area classified and mapped as priority habitat must have one or more of the following attributes:

- A. Comparatively high fish and wildlife density;
- B. Comparatively high fish and wildlife species diversity;
- C. Important fish and wildlife breeding habitat;
- D. Important fish and wildlife seasonal ranges;
- E. Important fish and wildlife movement corridors;
- F. Limited availability;
- G. High vulnerability to habitat alteration; or
- H. Unique or dependent species. A priority habitat may be described by a unique vegetation type or by a dominant plant species that is of primary importance to fish and wildlife (such as, oak woodlands, eelgrass meadows).

A priority habitat may also be described by a successional stage (e.g., old growth and mature forests). Alternatively, a priority habitat may consist of a specific habitat element (such as, consolidated marine/estuarine shorelines, talus slopes, caves, snags) of key value to fish and wildlife. A priority habitat may contain priority and/or non-priority fish and wildlife.

PRIORITY SPECIES—fish and wildlife species requiring protective measures and/or management guidelines to ensure their perpetuation. Priority species are those that meet any of the following criteria:

- A. State-listed or state candidate species. State-listed species are those native fish and wildlife species legally designated as endangered (§232-12-014 WAC), threatened (§232-12-011 WAC), or sensitive (§232-12-011 WAC). State candidate species are those fish and wildlife species that will be reviewed by the department of fish and wildlife for possible listing as endangered, threatened, or sensitive according to the process and criteria defined in §232-12-297 WAC.
- B. Vulnerable aggregations. Vulnerable aggregations include those species or groups of animals susceptible to significant population declines, within a specific area or statewide, by virtue of their inclination to congregate. Examples include heron rookeries, seabird concentrations, marine mammal haulouts, shellfish beds, and fish spawning and rearing areas.
- C. Species of recreational, commercial, and/or tribal importance. Native and nonnative fish, shellfish, and wildlife species of recreational or commercial importance and recognized species used for tribal ceremonial and subsistence purposes that are vulnerable to habitat loss or degradation.

- D. Species listed under the Endangered Species Act as either threatened or endangered. Federal candidate species are evaluated individually to determine their status in Washington and whether inclusion as a priority species is justified.

PRODUCTION—the amount of organic matter generated per unit of time or area by a plant or an animal

PRODUCTIVITY—the rate at which plants or animals generate organic matter

RAMP - A uniformly sloping platform, walkway, or driveway. The ramp commonly seen in the coastal environment is the launching ramp, which is a sloping platform for launching small craft.

REEF - An offshore chain or ridge of rock, shell, or sand at or near the surface of the water.

REFRACTION – The process by which the direction of a wave moving in shallow water at an angle to the contour is changed, causing the wave crest to bend toward alignment with the underwater contour.

REFUGE - Habitat area that provides protection from predators or disturbance.

RELIEF - The elevational features of a surface.

RENOURISHMENT - The follow-up nourishment of a beach **NOURISHMENT** or fill project, often required in high energy areas with rapid erosion.

RETAINING WALL - Wall built to keep bank of earth from sliding or water from flooding.

REVTMENT - A sloped facing built to protect existing land or newly created embankments against erosion by wave action, currents, or weather. Revetments are usually placed parallel to the natural shoreline.

RIP CURRENT - A strong surface current flowing seaward from the shore.

RIPARIAN - Pertaining to the terrestrial fringe of vegetation along a body of water.

RIPRAP - Layer, facing, or protective mound of stones placed to prevent erosion, scour, or sloughing of structure or embankment. May be used in construction of a **REVTMENT** or **BULKHEAD (ARMORING)**.

RUBBLE - Rough, irregular fragments of broken rock.

RUNUP - The rush of water up a structure or beach on the breaking of a wave.

RUNOFF - The liquid fraction of dredged material or the surface flow caused by precipitation on upland or nearshore dredged material disposal sites.

SALINITY - A measure of the concentration of dissolved salts in water, usually expressed as parts per thousand (ppt.)

SALMONID – Includes all species of fishes in the family Salmonidae (trout and salmon). Salmonids are the dominant fishes in the cold-water streams and lakes of North America and Eurasia. Most Puget Sound salmonids are ANADROMOUS.

SANDFLAT - Area extending from shoreline seaward that exhibits primarily sand substrate.

SCOUR - The removal of underwater material by waves and currents, especially at the base or toe of a structure.

SEAWALL – Substantial structure separating land and water areas, primarily designed to protect land against damage from wave action. See also BULKHEAD.

SEDIMENT - Material, such as sand, silt, or clay, suspended in or settled on the bottom of a water body. Sediment input to a body of water comes from natural sources, such as erosion of soils and weathering of rock, or as the result of anthropogenic activities, such as forest or agricultural practices, or construction activities. The term dredged material refers to material that has been dredged from a water body, while the term sediment refers to material in a water body prior to the dredging process.

SEDIMENT DYNAMICS - The physical processes that sediment particles are subject to in an area, such as longshore drift.

SEDIMENT SOURCE - A point or area on a coast from which beach material arises, such as an eroding cliff, or river mouth.

SEMI-DIURNAL TIDE – A tide with two high and two low waters in a tidal day with comparatively little diurnal inequality.

SHORE – The narrow strip of land in immediate contact with the sea, including the zone between high and low water lines. A shore of unconsolidated material is usually called a beach.

SHORELINE - The intersection of a specified plane of water with the shore or beach.

SHORELINE DEVELOPMENT - As regulated by the Shoreline Management Act (Chapter 90.58 RCW) the construction over water or within a shoreline zone (generally 200 feet landward of the water) of structures such as buildings, piers, bulkheads, and breakwaters, including environmental alterations such as dredging and filling, or any project which interferes with public navigational rights on the surface waters.

STORM SURGE – A rise above normal water level on the open coast due to the action of wind forces on the water surface or to atmospheric pressure reduction.

STORM WATER - Water that is generated by rainfall and is often routed into drain systems in order to prevent flooding. See also **NON- POINT SOURCE POLLUTION**.

STORM WAVE – Wave generated by strong winds during a storm event that can attain height.

STRUCTURE – A permanent or temporary edifice or building, or any piece of work artificially built or composed of parts joined together in some definite manner on, above, or below the surface of the ground or water, except for vessels.

SUBSTRATE - Solid material upon which an organism lives or to which it is attached.

SUBTIDAL - The marine environment below low tide.

SURF ZONE - The area between the outermost breaker and the limit of wave uprush.

SURFACE WATER - Water that travels across the surface of the ground, rather than infiltrating.

SUSPENDED SOLIDS - Organic or inorganic particles that are suspended in water. The term includes sand, silt, and clay particles as well as other solids, such as biological material, suspended in the water column.

SWELL – Wind-generated waves that have traveled out of their generating area. Swell characteristically exhibits a more regular and longer period and has flatter crests than waves within their fetch.

TERRESTRIAL - Growing or living on or peculiar to the land, as opposed to the aquatic environment.

TIDAL CHANNEL – A channel through which water drains and fills intertidal areas or connects two bodies of water.

TIDAL CURRENT – The alternative horizontal movement of water associated with the rise and fall of the tide caused by the astronomical tide-producing forces.

TIDAL FLAT - The sea bottom, usually wide, flat, muddy, and unvegetated which is exposed at low tide; marshy or muddy area that is covered and uncovered by the rise and fall of the tide.

TIDAL RANGE – The difference in height between consecutive high and low water.

TOE - The lowest part of a bluff, bank, or shoreline structure, where a steeply sloping face meets the beach.

TOMBOLO - A causeway-like accretion spit connecting an offshore rock or island with the main shore

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

TRAINING WALL - A wall or jetty to direct current flow.

TRANSPORT - The movement of sediment along a current pathway.

TURBIDITY - A measure of the clarity of water, indicating quantities of suspended material. Higher turbidity results in lower levels of light penetration throughout the water column.

UNDERTOW - A current below water surface flowing seaward; the receding water below the surface from waves breaking on a shelving beach.

UPLANDS - The land above a shoreline.

URBAN GROWTH – Growth that makes intensive use of land for the location of buildings, structures, and impermeable surfaces to such a degree as to be incompatible with the primary use of land for the production of food, other agricultural products, or fiber, or the extraction of mineral resources, rural uses, rural development, and natural resource lands designated pursuant to §36.70A.170 RCW. A pattern of more intensive rural development, as provided in §36.70A.070(5)(d) RCW, is not urban growth. When allowed to spread over wide areas, urban growth typically requires urban governmental services. "Characterized by urban growth" refers to land having urban growth located on it, or to land located in relationship to an area with urban growth on it as to be appropriate for urban growth.

WATER COLUMN - The water in a lake, estuary, or ocean which extends from the bottom sediments to the water surface.

WATERSHED - The geographic region within which water drains into a particular river, stream or body of water. A watershed includes hills, lowlands and the body of water into which the land drains. Watershed boundaries are defined by the ridges of separating watersheds.

WAVE – A ridge, deformation, or undulation of the surface of a liquid.

WAVE ENERGY - Force exhibited by waves, which culminates in impact to an object or surface.

WAVE HEIGHT – The vertical distance between a crest and the preceding trough.

WAVE PERIOD – The time for two successive wave crests to pass a fixed point.

WAVE STEEPNESS - The ratio of the wave height to the wavelength.

WETLANDS - Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water.

YOUNG-OF-THE-YEAR - Animals at 0 + years of age (i.e. less than one year of age)

ZONING - To designate, by ordinances, areas of land reserved and regulated for specific land uses.

ZOOPLANKTON - The group of small, primarily microscopic, passively suspended or weakly swimming animals in the water column.