# 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, McMurray and Bailey 1998, Komar 1998, Voigt 1998, CERC 1984). 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. They are provided anyway for completeness.

ABIOTIC - The non-living factors of a given area, such as temperature, wind, substrate, etc.

ACCRETION - May be either natural or artificial. 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)

ALLUVIUM - Unconsolidated mineral material moved by water and deposited in a fan shape at streams, river beds, floodplains, lakes, estuaries, and at the base of mountain slopes

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 ENVIRONMENT – The geochemical environment in which dredged material is submerged under water and remains water saturated after disposal is completed.

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. Also referred to as HARDENING.

ARTIFICIAL REEF - A man-made structure designed to simulate a natural reef.

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.

BACKSIDE EROSION - Erosion of the material behind a structure such as a bulkhead or seawall. Usually caused by wave overtopping or runoff.

BACKWASH – The seaward return of the water following the uprush of the waves.

BAITFISH - Group of fish that are important to salmonids as food fish and 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.

BARRIER BEACH - An accretion shore form of sand and gravel that has been deposited by longshore drift in front of bluffs, bays, marshes, or estuaries, and functions like a storm barrier.

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 EQUILIBRIUM - Equilibrium is attained when the shore orients itself parallel to the predominant wave direction, and when the amount of sediment supplied is balanced with the amount of sediment carried away. When beach attains its equilibrium, it adapts its morphology and configuration to redistribute sediments equally along its shore and to minimize the impact of the waves and currents.

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

BEACH FEEDING - A process by which beach material is deposited at one or several locations in the updrift portion of a driftway. The material is then naturally transported by a wave's down drift to stabilize or restore eroding beaches or berms

BEACH GRADIENT - The angle of the beach down the beach profile, as it extends seaward.

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 of terrestrial and tidal shorelines or submerged shorelines for the purposes of stabilization, recreational enhancement, or aquatic habitat creation or restoration.

BENEFICIAL USES - Placement or use of material for some productive purpose. Beneficial uses may involve either the material or the placement site as the integral component of the beneficial use

BENTHOS - Organisms growing on or associated principally with the water bottom. (BENTHIC)

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 AVAILABLE TECHNOLOGY - The most effective method, technique, or product available, which is generally accepted in the field, and which is demonstrated to be reliable, effective and preferably low maintenance.

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.

BIOMAGNIFICATION – An ecological relationship where a contaminant accumulates to higher concentrations in tissue compared to 1) the exposure media or 2) organisms organized to increasing trophic level (Poston, Ted. 2001. Treated Wood Issues Associated with Overwater Structures in Marine and Freshwater Environments).

BIOPHYSICAL - The biological and physical attributes of an ecosystem.

BIOTA - The animal and plant life of a region.

BIOTECHNICAL - Method of shoreline stabilization that utilizes vegetation to enhance slope stability and resist erosion.

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.

BORROW PIT - Dredged area that supplies the sediment for a nourishment project.

BREACHING - The breaking of a dike to form a channel. May be natural or caused by man.

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 upland 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 SEA WALL, RIPRAP, SHEET PILE.

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.

CONTOUR WATTLING - Method of slope stabilization that involves the use of wrapped vegetation bundles along the contour of a face, in order to facilitate lateral water runoff and reduce downcutting.

CONSTRUCTIVE WAVES - Waves that move sediments up the BEACH PROFILE and help building the beach.

CONTROLING FACTOR – See Williams and Thom 2001, Marine and Estuarine Shoreline Modification Issues.

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

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.

CULVERT - Man-made structure placed to enhance water flow-through an area, generally a pipe.

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.

DEFLATION - The removal of loose material from a beach or other land surface by wind action.

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.

DESTRUCTIVE WAVES – Waves that move sediments from the upper BEACH PROFILE to deeper water and help eroding the beach.

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

DIKE - Wall or mound built around low-lying area to control flooding.

DISCHARGE, DIRECT OR INDIRECT - 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.

DISPHOTIC ZONE - The region of water below the euphotic zone, that receives low levels of light, but not enough for photosynthesis

DISTRIBUTARY CHANNEL - A channel that flows off of and away from the main channel, which does not rejoin.

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

DOWNCUT - Large channel down the slope of a face, caused by heavy runoff.

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 – See DRIFT SECTOR

DRIFT SECTOR - 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 supplied 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).

EBB CURRENT – The tidal current away from shore or down a tidal stream; usually associated with the decrease in height of the tide. See FLOOD CURRENT.

ECOLOGICAL FUNCTIONS - Those natural physical, chemical, and biological processes that contribute to the proper functioning and maintenance of aquatic and terrestrial ecosystems means those shoreline areas that retain the majority of their natural shoreline functions and values, as evidenced by vegetation and shoreline configuration. Generally, but not necessarily, ecologically intact shorelines are free of structural shoreline modifications, structures, and intensive human activities. In unmanaged forested areas, they generally include native vegetation with a diversity of species, multiple canopy layers, and large woody debris available for recruitment. Recognizing that there is a continuum of ecological conditions ranging from near natural conditions to totally degraded and contaminated sites, this definition is intended to delineate those shoreline areas that provide valuable functions for the larger shoreline ecosystem which would be lost by significant human development. Whether or not a shoreline is ecologically intact is determined on a case-by-case basis using best available science. The term "ecologically

intact shorelines" applies to all shoreline areas meeting the criteria ranging from larger reaches that may include several properties, to small areas located within a single property.

ECOLOGICAL PROCESS – See Williams and Thom 2001, Marine and Estuarine Shoreline Modification Issues.

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.

ENCRUSTING BIOTA - Animal or plant life that attaches itself to a given substrate or object, such as a barnacle or mussel.

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. On a beach, the carrying away of beach material by wave action, tidal currents, littoral currents, or by deflation.

ESTUARY - Region near river mouth where fresh water mixes with salt water of sea with salinity levels of >0.06 Rpt and < 30 Rpt. (ESTUARINE)

EUPHOTIC ZONE - The surface waters of the oceans that receive sufficient light for photosynthesis to occur.

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.

FISH AND WILDLIFE ASSEMBLAGES - Groups of species that are representative of all fish and wildlife species that commonly utilize specific estuarine habitats; not inclusive of all species, but each use, such as feeding, reproduction, etc. is represented; not guilds

FIXED PIER - A fixed structure supported by pilings

FLANKING - Wave action around the top or sides of a structure.

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

FLOOD CURRENT – The tidal current toward shore or up a tidal stream, usually associated with the increase in the height of the tide. See EBB CURRENT.

FORAGE FISH - See BAITFISH.

FORESHORE - Part of the shore lying between crest of seaward berm and ordinary low water mark.

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 – See Williams and Thom 2001, Marine and Estuarine Shoreline Modification Issues.

HABITAT STRUCTURE – See Williams and Thom 2001, Marine and Estuarine Shoreline Modification Issues.

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.

HARDENING - See ARMORING.

HYDRAULIC - Of or pertaining to water.

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

HYDROSTATIC PRESSURE – Pressure in a system due to the presence and weight of water at rest.

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

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.

INFILTRATION - Water flow into the soil.

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

INTERSPECIFIC COMPETITION - Competition for resources between different species.

INTERTIDAL - The area between MHHS and MLLW tides, which is uncovered periodically.

INTRASPECIFIC COMPETITION - Competition for resources among individuals of the same species. see also INTERSPECIFIC COMPETITION.

INVERTEBRATES - Animals that lack a bony or cartilaginous skeletal structure.

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.

LEE-SIDE - The side of a structure protected from wind or wave action.

LITTORAL - Of or pertaining to the shore

LITTORAL CELL – See DRIFT SECTOR.

LITTORAL SYSTEM – Defines a zone extending seaward from the shoreline to just beyond the breaker zone where the coastal processes take place.

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

LONGSHORE BAR - An underwater ridge of sand running roughly parallel to the shore, sometimes continuous over large distances, at other times having roughly even breaks along its length. It may become exposed at low tide. Often there is a series of such ridges parallel to one another at different water depths, separated by longshore troughs.

LONGSHORE TRANSPORT – Transport of sedimentary material parallel to the shore.
LONGSHORE TROUGH - An elongated depression extending parallel to the shoreline and any longshore bars that are present often representing the low point in the profile between successive bars.

LOW TIDE TERRACE - - A flat zone of the BEACH near the low water level. Found along much of East Bainbridge Island, some of West Bainbridge Island, Restoration Point, and South Beach, Bainbridge Island.

MACROFAUNA - Organisms in a particular ecosystem that are of a visible size.

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 climate 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 o the external aqueous environment; i.e., the salt concentration of internal body fluids is maintained at a different level from that of the environment (Barnes, Robert D. 1987 Invertebrate Zoology. CBS College Publishing; New York, New York.).

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.
OVERTOPPING - Passing of water over the top of a structure as a result of wave runup or surge action.

OVERWASH - That portion of the uprush that carries over the crest of a berm or of a structure.

PAH – Poly aromatic hydrocarbons.

PARTICLE BINDING - Stabilization of soil particles through natural mechanisms such as root-wad formation, reducing the potential of loss through wind or water erosion.

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.

PHYSICOCHEMICAL - The physical and chemical properties of water.

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.
PONDING BASIN - Area designed to trap water runoff and allow it to drain at stable rate.

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 or ridge of sand at or near the surface of the water.

REFLECTIVE WAVE – That part of an incident wave that is returned seaward when a wave impinges on a steep beach, barrier, or other reflecting surface such as a bulkhead.

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.

REMINERALIZE - Process through which nutrients are broken down into their original inorganic structure, and are made available for biological use.

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.

REVETMENT - 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.

RILL - Tiny drainage channel in a soil surface caused by the downward flow of surface water.

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

RIPARIAN - Pertaining to the terrestrial fringe 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 REVETMENT..

RUBBLE - Rough, irregular fragments of broken rock.

RUBBLE-MOUND STRUCTURE - Mound of random-shaped and random-placed stones protected with cover layer of stones or specially shaped concrete armor units.
RUNUP - The rush of water up a structure or beach on the breaking of a wave. See also UPRUSH, SWASH.

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 – A fish of the family Salmonidae (as distinct from a salmonid which is merely a fish that resembles a salmon). Fish in this family include salmon and trout. Most Puget Sound salmonids are anadromous.

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

SCARP - A nearly vertical escarpment cut into the beach profile by wave erosion. Its height is generally less than a meter, although higher examples are found. The scarp may lye at the top of the beach face when erosion is occurring, but older scarps can he found on the berm due to former episodes of erosion.

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 SINK - A point or area at which beach material is irretrievably lost from a LITTORAL CELL, such as an estuary, or a deep channel in the seabed.

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

SEEP - Location where groundwater rises above the land surface, or exits the soil on a slope.

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

SHEET PILE - A pile with a generally slender flat cross section to be driven into the ground or seabed and meshed or interlocked with like members to form a diaphragm, wall, or BULKHEAD. See also SEA WALL.

SHOALING - Gradual procession from a greater to a lesser depth of water.

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.

SPATIAL PATCHINESS - Refers to the clumped nature of biotic distribution in an ecosystem.

SPAWNING - Production and deposition of eggs, with reference to aquatic animals.

SPECIES RICHNESS - A metric used to compare the diversity of species among ecosystems, indicative of variety.

STANDING WAVE – A type of wave in which the surface of the water oscillates vertically between fixed points without progression. Sometimes called Clapotis or Stationary Waves.

STORM DRAIN - A system of gutters, pipes or ditches used to carry storm water from surrounding lands to streams, lakes or Puget Sound. In practice storm drains carry a variety of substances such as sediments, metals, bacteria, oil and antifreeze that enter the system through runoff, deliberate dumping or spills. This term also refers to the end of the pipe where the storm water is discharged. See also NON-POINT SOURCE POLLUTION.

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 STORM DRAIN and 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.

SUBAERIAL WETLAND - Wetlands that occur landward of the general salt-water shoreline -- excludes intertidal wetlands.

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.

SWASH – See RUNUP

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.

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 PRISM - The total amount of water that flows into a harbor or estuary or out again with movement of the tide, excluding any freshwater flow.

TIDE GATE - An opening through which water may flow freely when the tide or water level is low or high, but which will be closed to prevent water from flowing in the other direction when the water level changes.

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.

UPDRIFT - The direction opposite that of the predominant movement of littoral materials.

UPLANDS - The land above a shoreline.

UPRUSH – See RUNUP

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.

VESSEL DRAFT – See DRAFT

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 CLIMATE - Annual and seasonal conditions that characterize the wave activity in a particular region.

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.

WAVE TRAIN – A series of waves from the same direction.

WEIR JETTY - An updrift jetty with a low section or weir over which littoral drift moves into a pre-dredged deposition basin that is periodically dredged.

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.

WINNOW (verb) – To remove

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.

# APPENDIX A - MAPS

Appendix not available at this time. Contact City of Bainbridge Island for large print reference maps.

# APPENDIX B – NEARSHORE CLASSIFICATION SYSTEMS

Appendix not available at this time. See Appendices A and B in Williams et al. (2001).