

Glossary

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CASCO BAY PLAN

GLOSSARY

A

algae bloom (or algal blooms): A growth of algae resulting from excessive nutrient levels or other physical and chemical conditions that enable algae to reproduce rapidly.

amphibians: Members of the vertebrate (with backbones) class Amphibia, including frogs, toads, newts, and salamanders, that usually begin life in the water as tadpoles with gills and later develop lungs.

amphipods: Small shrimp-like crustaceans such as sand fleas and related forms. Most live on the bottom (*i.e.*, are benthic) and feed on algae or detritus.

anadromous fish: A species, such as salmon, alewives, smelt, and shad, that is born in fresh water, spends a large part of its life in the sea, and returns to freshwater rivers and streams to mate and give birth (*i.e.*, spawn).

B

baseline study: A study that documents the existing state of an environment to serve as a measure against which future measures are compared and assessed.

benthic: Living in or on the bottom of a body of water.

benthos: Collectively, all organisms living in, on, or near the bottom substrate in aquatic habitats.

best management practices: Techniques to reduce nonpoint-source impacts from construction, agriculture, timber harvesting, marinas, and stormwater. Manuals describing these techniques (stormwater and marinas) have been developed by the State of Maine.

bioaccumulation: The process by which a contaminant accumulates in the tissues of an individual organism.

butyltin: A chemical that is the sum of tetrabutyltin (4BT), tributyltin (TBT), dibutyltin (DBT), and monobutyltin (MBT). 4BT has been detected in shipyards, probably from paint chips. TBT is used in marine paints to prevent fouling by marine invertebrates (*e.g.*, barnacles and mussels). DBT and MBT are the degradation products of TBT. Butyltins have been found to have negative impacts on marine organisms and their use has been limited to larger vessels since 1989.

C

carcinogenic: Capable of causing cancer.

channelization: The formation of a passage for stormwater runoff or the straightening of streams or waterways that can result in flooding, reduction of groundwater discharge, alteration of stream flows, changes in water temperatures and salinities, and increased erosion — all of which impact habitats.

chlordane: A chlorinated organic insecticide (pesticide) having both stomach poison and fumigant properties. Like DDT, it has a high degree of persistence in the environment and a tendency to be concentrated in the food chain. The U.S. Environmental Protection Agency banned its use in 1988.

cocktail effect: A slang term for the property of some toxic contaminants to become more toxic when combined with other toxic materials. The sum of two materials can be more toxic than each individually.

combined sewer overflow: A pipe that, during storms, may discharge untreated sewage and stormwater. The overflow occurs because the sewage treatment plant does not have the capacity to treat the increased flow caused by stormwater runoff.

contaminant: A substance that is not naturally present in the environment or is present in amounts that can, in sufficient concentrations, adversely affect the environment.

crustaceans: Invertebrates (animals without backbones) of the phylum Arthropoda, including amphipods, shrimps, crabs, copepods, barnacles, and other animals that have segmented bodies, jointed legs, and hard external shells.

cumulative effect: 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 impact, the combined effect can be severe.

D

DDD: See DDT.

DDE: See DDT.

DDT (dichloro-diphenyl-trichloroethane): The first chlorinated hydrocarbon insecticide (pesticide). Collects in the fatty tissue of some animals and was responsible for eggshell-thinning and reproductive failure in eagles. The U.S. Environmental Protection Agency banned registration and interstate sale in 1972 because of its persistence in the environment and accumulation in the food chain. In the environment, DDT breaks down to form DDD and DDE, which are also toxic. DDT is still produced in many countries, including Mexico.

dioxin: See PCDD/PCDF.

dredged material: Sediments or other material removed from the bottom of a waterway, usually for navigation or docking purposes.

E

ecosystem: The interacting system of living organisms with one another and their physical environment.

“ecosystem management” (as used in this *Plan*): An approach to environmental management that takes into account the interrelatedness of a system’s physical, chemical, and biological components.

eelgrass (*Zostera marina*): A marine flowering plant that grows on intertidal and shallow subtidal sand or mudflats.

effluent: Waste material discharged into the environment.

erosion: Wearing away of rock or soil by the gradual detachment of soil or rock fragments by water, wind, ice, and other mechanical and chemical forces. Human activities can greatly speed this detachment.

estuary: A semi-enclosed coastal body of water having a free connection with the open sea and within which seawater is measurably diluted with fresh water.

“eutrophication” (as used in this *Plan*): The uncontrolled growth of nuisance algae that can indirectly deplete oxygen and kill marine life. This growth is caused by the excessive inputs of nutrients such as nitrogen.

F

food chain: The chain of organisms, existing in any natural community, through which energy is transferred. Each link in the chain feeds on and obtains energy from the one preceding it and, in turn, is eaten by and provides energy for the one following it (*e.g.*, a worm feeds on microscopic plants, the worm is eaten by a fish, and the fish is eaten by a seal).

furan: See PCDD/PCDF.

H

habitat: Places where plants and animals live, feed, find shelter, and reproduce.

hydrologic cycle: The continual cycling of water between the land, the sea, and the atmosphere through evaporation, condensation, precipitation, absorption into the soil, and stream or river runoff.

I

impervious surface: A surface, such as a roof or pavement, that cannot be easily penetrated by water.

indicator organism: Something that is used to assess water or habitat quality. For example, fecal coliform bacteria have been used to indicate the presence of pathogens that are harmful to humans; however, these bacteria are found in the intestinal tract of all mammals, not just humans.

intertidal: Areas between high tide and low tide that are alternately exposed to seawater and air. Extreme high and low tides occur periodically (depending on the phase of the moon and time of year) and are considered intertidal in this *Plan*.

L

leach: Washing from a solid material (*e.g.*, metals wash from rocks and minerals into the environment).

leach field: Part of a septic system. The area where the liquid (effluent) from the septic tank is dispersed into the soil.

M

marine invertebrates: Animals without backbones that live in salt water, including clams, amphipods, lobsters, sandworms, starfish, and sea urchins.

metals or heavy metals: A group of elements found in rocks and minerals that are naturally released to the environment by erosion, as well as generated by human activities. Certain metals, such as mercury, lead, zinc, and cadmium, are of environmental concern because they are released into the environment in excessive amounts by human activity and can produce toxic effects.

mollusks: An aquatic invertebrate (without a backbone) animal of the phylum Mollusca. Mollusks, such as clams, mussels, and snails, have an outside protective shell.

N

nitrogen: A nutrient required for plant growth, often present in limited supply in the ocean during the growth season. Nitrogen is present as organic nitrogen or in the inorganic forms of ammonia, nitrite, and nitrate. The inorganic forms are available to marine plants, while most other forms of organic nitrogen must be broken down by bacteria before they can be used for plant growth.

nonpoint source: An indirect discharge, not from a pipe or other specific source, usually as a result of stormwater runoff.

nutrients: Essential chemicals needed by plants and animals for growth. Enriched nutrient loads from sewage, land runoff, and atmospheric deposition can result in excessive growth of algae and lead to degradation of water quality. Nitrogen is generally the nutrient of concern in salt water.

O

organic chemicals: A bonded form of carbon, hydrogen, and other atoms. Many occur naturally and several hundred thousand have been developed by chemists for use in oils, paints, pesticides, cleaners, solvents, insulation, and fire retardants. They are generally slow to break down in the environment.

overboard discharges: Discharges into a water body from overboard discharge units (or systems). These units were designed to treat wastes from households and small commercial operations such as restaurants. Overboard discharge units have mechanical or sand filter treatment followed by chlorination.

oxygen (or dissolved oxygen): Oxygen that is present in water and therefore available for fish and other aquatic animals to use. If the amount of dissolved oxygen is too low, then aquatic animals may become stressed or die.

P

PAHs or polynuclear (or polycyclic) aromatic hydrocarbons: A class of complex organic chemicals, some of which are persistent and cancer-causing. Many of these compounds are formed from the combustion of fossil fuels such as coal and oil. They are discharged from smokestacks, chimneys, and car exhausts. Also, oil spills and other fuel discharges contain PAHs.

pathogen: An agent such as a virus, bacterium, or fungus that can cause diseases in humans.

PCBs or polychlorinated biphenyls: A group of manufactured chemicals including about 70 different but closely related compounds made up of carbon, hydrogen, and chlorine. If released to the environment, they persist for long periods and can accumulate in the tissues of organisms. PCBs are suspected of causing cancer in humans and their manufacture was banned in 1979.

PCDD/PCDF or polychlorinated dibenzo-dioxins and polychlorinated dibenzo furans (dioxins/furans): Chemicals that are by-products of many processes that include chlorination steps. Paper mills, wood treatment facilities that use the chemical pentachlorophenol, steel mills, incinera-

tors, and other combustion processes are some of the potential sources of PCDD/PCDF in the environment. Environmental loadings are sometimes associated with high levels of other environmental contaminants such as planar PCBs.

pesticides: Pesticides include herbicides, insecticides, fungicides, and rodenticides that are used to control unwanted plants, insects, fungi, or rodents, respectively. Most of these chemicals are manufactured and are not found naturally in the environment.

planar PCBs: Three forms (congeners) of PCBs (PCB77, PCB126, and PCB169) that have been found to be the most toxic of the many compounds (congeners) that make up total PCBs, even though they are often present in lower concentrations than the other PCB forms (congeners).

plankton: Those organisms free-floating or drifting in the open water having their movements largely determined by the motion of the water. Zooplankton refers to planktonic animals and phytoplankton refers to planktonic plants, both of which are usually microscopic. These organisms are an extremely important food source for animals.

plumbing code or the Maine Subsurface Wastewater Disposal Rules: A document developed by the Maine Department of Human Services that specifies design and construction standards for all subsurface (*i.e.*, underground) sewage disposal systems. Municipal licensed plumbing inspectors are required to enforce the rules.

point source: Any confined and discrete conveyance (usually a pipe) from which pollutants are or may be discharged into a watershed.

R

remediation: Treatment of contaminated sediments so that the sediments are no longer toxic.

runoff: That part of precipitation, snowmelt, or irrigation water that runs off the land into water bodies. It can carry pollutants from the air and land into the water body.

S

sanitary survey: A survey that includes a shoreline survey, water quality sampling, and an evaluation of physical influences used by the Maine Department of Marine Resources to determine how a shellfish area should be classified (see shellfish classification).

seeding clam flats: Moving tiny clams from a flat that has an abundance of young clams to another flat that appears to have limited numbers of clams to increase commercial clam production.

septic system: An individual sewage treatment system that typically includes a septic tank and leach field that are buried in the ground. The septic tank allows sludge to settle to the bottom and a scum of fats, greases, and other lightweight materials to rise to the top. The remaining liquid flows to the leach field where it is dispersed over soil in order to reduce the number of bacteria and viruses.

settlement: The transition from a developmental stage where animals are carried by ocean currents to a stage where the animal takes up residence on a bottom substrate (*e.g.*, a clam flat). Many benthic marine animals spend their early life stages being carried about by currents as part of the plankton.

shellfish classification: Categories for shellfish areas determined by the Maine Department of Marine Resources based on the results of a sanitary survey. The categories include approved (open), conditionally approved, restricted, conditionally restricted, and prohibited (closed to shellfish harvesting).

shellfish ordinances: Municipal ordinances (laws) that manage shellfish resources (*e.g.*, licensing and conservation closures) within a municipality. These ordinances must follow Maine Department of Marine Resources guidelines and receive its approval.

stormwater runoff: Runoff caused by rain or snow storms.

straight pipes: Pipes that carry untreated household sewage from sinks, toilets, showers, washing machines, and dishwashers from a residence to a water body.

subtidal: Areas that are always beneath salt water.

T

toxic: Poisonous, carcinogenic, or otherwise directly harmful to life.

V

vernal pools: Wetlands that hold standing water for several months in the spring and early summer and provide important breeding sites for amphibians.

W

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 land separating watersheds.

wetlands (as used in this *Plan*): Includes all areas that are associated with water, including forested wetlands (or wooded swamps), freshwater and saltwater marshes (of any size), rivers, streams, intermittent streams, vernal pools, intertidal areas of all types, and subtidal areas.