

G L O S S A R Y

Below is a listing of terms cited in this volume and their definitions. Sources of the definitions are listed below. Terms without a citation were defined by the authors. When multiple entries for the same term are found, usage adopted in this volume is indicated by a preceding asterisk.

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GLOSSARY

- algal.** Subclass in the Cowardin et al. wetland classification referring to algal communities found in the aquatic bed subclass (Cowardin et al. 1979).
- alkaline.** Pertaining to habitats or substances having a pH greater than 7; basic (Lincoln, Boxshall & Clark 1982).
- alluvial.** Having stream deposits and sediments formed by the action of running water (California Coastal Commission 1987).
- alluvial fans.** A low, outspread, relatively flat to gently sloping mass of loose rock material, shaped like an open fan or a segment of a cone, deposited by a stream (esp. in a semiarid region) at the place where it issues from a narrow mountain valley upon a plain or broad valley, or where a tributary stream is near or at its junction with the main stream, or wherever a constriction in a valley abruptly ceases or the gradient of the stream suddenly decreases; it is steepest near the mouth of the valley where its apex points upstream, and it slopes gently and convexly outward with gradually decreasing gradient (Bates & Jackson 1980).
- aquatic.** Growing or living in or frequenting water; taking place in or on water (Warner & Hendrix 1984).
- aquatic bed.** Class in the Cowardin et al. wetland classification referring to wetland and deepwater habitats dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years (Cowardin et al. 1979).
- aquatic moss.** Subclass in the Cowardin et al. wetland classification referring to mosses, and presumably other bryophytes, that are found in the aquatic bed subclass (Cowardin et al. 1979).
- anchorage.** A place for anchoring (Stein 1973).

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artificially flooded. Water regime in the Cowardin et al. wetland classification in which the amount and duration of flooding is controlled by means of pumps or siphons in combination with dikes or dams (Cowardin et al. 1979).

association. A collection of units or parts into a mass or whole (e.g., a group of animals or plants, or both). A statement of physical proximity or grouping, without necessarily requiring or implying interactions between units of the group, in contrast to "community", which does (Warner & Hendrix 1984).

atoll. A horseshoe or circular array of islands, capping a coral reef system perched around an oceanic volcanic seamount (Levinton 1982).

backbar channel. A channel formed behind a bar connected to the main channel but usually at a higher bed elevation than the main channel. Backbar channels may or may not contain flowing or standing water.

backshore. The zone of a typical beach profile above mean high water; also used for the zone covered only in exceptionally severe storms (Lincoln, Boxshall & Clark 1982).

backwater pools. A pool type formed by an eddy along channel margins downstream from obstructions such as bars, rootwads, or boulders, or resulting from back-flooding upstream from an obstructive blockage. Backwater pools are sometimes separated from the channel by and or gravel bars (American Fisheries Society 1985).

bank. The portion of the channel cross section that restricts lateral movement of water at normal levels. The bank often has a gradient steeper than 45° and exhibits a distinct break in slope from the stream bottom. An obvious change in substrate may be a reliable delineation of the bank (American Fisheries Society 1985).

***bar.¹** An elongated landform generated by waves and currents, usually running parallel to the shore, composed predominantly of unconsolidated sand, gravel, stones, cobbles, or rubble and with water on two sides (Cowardin et al. 1979).

bar.² A generic term for any of various elongate offshore ridges, banks, or mounds of sand, gravel, or other unconsolidated material, submerged at least at high tide, and built up by the action of waves or currents on the water bottom, esp. at the mouth of a river or estuary, or at a slight distance from the beach (Bates & Jackson 1987).

bar.³ A submerged ridge of alluvial deposit in shallow water, produced by the action of water or wind currents (Lincoln, Boxshall & Clark 1982).

bay. A wide, curving indentation, recess, or arm of a sea or lake into the land or between two capes or headlands, larger than a cove, and usually smaller than, but of the same general character as, a gulf (Bates & Jackson 1987).

***beach.¹** A sloping landform on the shore of larger water bodies, generated by waves and currents and extending from the water to a distinct break in landform or substrate type (e.g., a foredune, cliff, or bank) (Cowardin et al. 1979).

beach.² The relatively thick and temporary accumulation of loose water-borne material (usually well-sorted sand and pebbles, accompanied by mud, cobbles, boulders, and smoothed rock and shell fragments) that is in active transit along, or deposited on, the shore zone between the limits of low water and high water (Bates & Jackson 1987).

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beachcomb. A leisurely, pleasurable stroll along a beach, typically collecting jetsam.

bed. The substrate plane, bounded by banks, over which the water column at some point in time resides (American Fisheries Society 1985).

bedload. The part of the total stream load that is moved on or immediately above the stream bed, such as the larger or heavier particles (boulders, pebbles, gravel) transported by traction or saltation along the bottom (Bates & Jackson 1987).

bedrock. Subclass in Cowardin et al. referring to classes in which the bedrock covers 75% or more of the surface (Cowardin et al. 1979).

bench. A long, narrow, relatively level terrace or platform breaking the continuity of a slope. The term sometimes denotes a form cut in solid rock, as distinguished from one in unconsolidated material (Bates & Jackson 1984).

berm. a levee, shelf, ledge or bench along a stream bank that may extend laterally into the channel to partially obstruct the flow, or parallel to the flow to contain the flow within its stream banks. Berms may be natural or artificial (American Fisheries Society 1985).

bioaccumulation. The accumulation of a particular element or compound by any or all members of a particular biota.

blow-hole. A nearly vertical hole, fissure, or natural chimney in coastal rocks, leading from the inner end of the roof of a sea cave to the ground surface above, through which incoming waves and the rising tide forcibly compress the air to rush upward or spray water to spout intermittently, often with a noise resembling a geyser outburst (Bates & Jackson 1987).

bluff. A high bank or bold headland, presenting a precipitous front; a steep cliff (Bates & Jackson 1984).

boat ramp. An incline constructed at the shoreline of a water body to allow the launching of boats and other vessels.

bottom. The floor upon which any body of water rests (Bates & Jackson 1987).

bottomland. A lowland, usually highly fertile, along a stream; an alluvial plain (Bates & Jackson 1984).

brackish. Marine and estuarine waters with mixohaline salinity. The term should not be applied to inland waters (Cowardin et al. 1979).

breakwater. An offshore structure (such as a wall or jetty) that, by breaking the force of the waves, protects a harbor, anchorage, beach, or shore area (Bates & Jackson 1987).

broad-leaved deciduous. Subclass in the Cowardin wetland classification referring to wetlands in which the predominant trees or shrubs are angiosperms that lose their leaves once a year.

broad-leaved evergreen. Subclass in the Cowardin wetland classification referring to wetlands in which the predominant trees or shrubs are angiosperms that retain their leaves for longer than one year, and that always have some canopy.

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buoy. A distinctly shaped and marked float, sometimes carrying a signal or signals, anchored to mark a channel, anchorage, navigational hazard, etc., or to provide a mooring place away from shore (Stein 1973).

calcareous. Composed of or containing calcium carbonate (California Coastal Commission 1987).

canyon. A stream-cut chasm or gorge, the sides of which are composed of cliffs or a series of cliffs rising from its bed. Canyons are characteristic of arid or semiarid regions where downcutting by streams greatly exceeds weathering (Bates & Jackson 1984).

cascades. A habitat type characterized by swift current, exposed rocks and boulders, high gradient and considerable turbulence and surface agitation, and consisting of a stepped series of drops (American Fisheries Society 1985).

channel. An open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water (Langbein & Iseri 1960).

channel bank. The sloping land bordering a channel. The bank has steeper slope than the bottom of the channel and is usually steeper than the land surrounding the channel (Cowardin et al. 1979).

circumneutral. Term applied to water with a pH of 5.5 to 7.4 (Cowardin et al. 1979).

cliff. Any high, very steep to perpendicular or overhanging face of rock (Bates & Jackson 1987).

cobble-gravel. Subclass in the Cowardin et al. wetland classification referring to unconsolidated particles smaller than stones, sometimes intermixed with finer sediments (Cowardin et al. 1979).

community. An association of living organisms having mutual relationships among themselves and their environment and thus functioning, at least to some degree, as an ecological unit (Warner & Hendrix 1984).

coral. Subclass in the Cowardin et al. wetland classification referring to widely distributed, well-adapted, highly diverse and productive ecosystems characteristic of shallow waters in warm seas (Cowardin et al. 1979).

cove. A small narrow sheltered bay, inlet, creek, or recess in a coast, often inside a larger embayment; it usually affords anchorage to small craft (Bates & Jackson 1987).

crude. Petroleum in its natural state as it emerges from a well (Bates & Jackson 1987).

culvert. Any covered structure, not classified as a bridge, that constitutes a transverse drain, waterway, or other opening under a road, railroad, canal, or similar structure (Bates and Jackson 1980); any covered structure that acts as a drain (Bates & Jackson, 1987).

dam. An artificial barrier or wall constructed across a watercourse or valley for one or more of the following purposes: creating a pond or lake for the storage of water; diverting water from a watercourse into a conduit or channel; creating a hydraulic head that can be used to generate power; improving river navigability; controlling floods; or retention of debris. It may be constructed of wood, earth materials, rocks, or solid masonry (Bates and Jackson 1980).

dead. Subclass in the scrub-shrub wetland and forested wetland classes of the Cowardin et al.

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wetland classification in which forested wetlands are dominated by dead woody vegetation (Cowardin et al. 1979).

decomposer. An organism that obtains its energy and nutritional requirements by feeding on dead organisms; or, a feeder on dead organisms (Botkin & Keller 198).

deepwater habitat. Permanently flooded land below the deepwater boundary of wetland (Cowardin et al. 1979).

delta.¹ The nearly flat alluvial tract of land at the mouth of a river, commonly forming a triangular or fan shaped plain. It is crossed by many distributaries, and results from the accumulation of sediment supplied by the river. Most deltas are partly subaerial and partly below water (Bates and Jackson 1984).

***delta.²** A fan-shaped alluvial deposit at the mouth of a river (California Coastal Commission 1987).

detritus. Organic debris from decomposing plants and animals (Abercrombie et. al. 1983).

desiccation. Removal of water; the process of drying (Lincoln, Boxshall & Clark 1982).

dike. A tabular body of igneous rock that cuts across the structure of adjacent rocks or cuts massive rocks. A massive wall or embankment built around a low-lying area to prevent flooding (Bates & Jackson 1984).

ditch. A long, narrow excavation artificially dug in the ground; especially an open and usually unpaved waterway, channel, or trench for conveying water for drainage or irrigation, and usually smaller than a canal. Some ditches may be natural watercourses (Bates and Jackson 1980).

dock. The berthing space or waterway between two wharves or two piers, or cut into the land (Bates & Jackson 1980).

***dominant.¹** An organism or other abiotic component exerting considerable influence upon a community by its size, abundance, or coverage; the highest ranking individual in a dominance hierarchy (Lincoln, Boxshall & Clark 1982).

dominant.² The species controlling the environment (Cowardin et al. 1979).

drainage.¹ The manner by which the waters of an area flow off in surface streams or subsurface conduits (Bates & Jackson 1984).

***drainage.²** (1) An artificial water course, such as a ditch or trench; (2) a natural watercourse modified to increase its flow (Stein 1973).

drift. Lateral displacement as a result of wind or water currents (Lincoln, Boxshall & Clark 1982).

dredge spoil. Silt, mud, etc. removed by the process of dredging.

dredge. To clear out mud, silt, etc. with any of various powerful machines from the bottom of a river or other water body.

dune pond ("lake"). A lake occupying a basin formed as a result of the blocking of the mouth of a stream by sand dunes migrating along the shore (Bates and Jackson 1980).

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dune swale. A low place among sand dunes, typically moister and often having distinctive vegetation differing from the surrounding sand environment.

ecosystem.¹ A community of organisms and their physical environment interacting as an ecological unit; the entire biological and physical content of a biotype; biosystem; holocoem (Lincoln, Boxshall & Clark 1982).

ecosystem.² The interacting complex of a community and its environment functioning as an ecological unit in nature. Differs from "ecosystem" in being a more rigorous definition that encompasses and requires assumptions of energetics, ecological interactions, species adaptations, and so forth (Warner & Hendrix 1984).

ecosystem.³ An interacting system of living organisms and their physical environment which is independent of other groups and is self-sustaining, provided it receives radiant energy (Little & Jones 1980).

ecosystem functions. Processes that are necessary for the self-maintenance of an ecosystem such as primary production, nutrient cycling, decomposition, etc. The term is used primarily as a distinction from values (Lee unpublished).

ecotone. A transition zone; a region of overlapping [organismal] associations, as that between two biomes or two adjacent ecosystems (Little & Jones 1980).

effluent. Any material that flows outward from something (i.e. waste water from hydroelectric plants and water discharged into streams from waste disposal sites) (Botkin & Keller, 1989).

emergent. Having part of a plant aerial and the rest submersed; with parts extending out of the water (Little & Jones 1980).

emergent hydrophytes. Erect, rooted, herbaceous angiosperms (flowering plants)[and ferns ?] that may be temporarily to permanently flooded at the base but do not tolerate prolonged inundation of the entire plant (e.g., bulrushes, saltmarsh cordgrass) (Cowardin et al. 1979).

emergent wetland. Class in the Cowardin et al. wetland classification characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens, and which is present for most of the growing season (Cowardin et al. 1979).

endemic. Native or confined naturally to a particular and usually very restricted geographic area or region (Little & Jones 1980).

environment.¹ The complex of biotic, climatic, edaphic and other conditions which comprise the immediate habitat of an organism; the physical, chemical and biological surroundings of an organism at any given time (Lincoln, Boxshall & Clark 1982).

***environment.²** The complex of factors that act upon an organism or an ecological community and ultimately determine its form and survival (Warner & Hendrix 1984).

evapotranspiration. Total water loss from an area by evaporation and transpiration (Little & Jones 1980).

falls. A waterfall or other precipitous descent of water (Bates and Jackson 1980).

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fault sag ponds. A small, enclosed depression along an active or recent fault. It is caused by differential movement between slices and blocks within the fault zone or by warping and tilting associated with differential displacement along the fault, and it forms the site of a sag pond (Bates & Jackson 1980).

fissure. A surface of fracture or a crack in rock along which there is a distinct separation (Bates & Jackson, 1987).

flat. A level landform composed of unconsolidated sediments - usually mud or sand. Flats may be irregularly shaped or elongate and contiguous with the shore, whereas bars are generally elongate, parallel to the shore, and separated from the shore by water (Cowardin et al. 1979).

floating vascular. Subclass in the Cowardin et al. wetland classification referring to a large array of vascular plants floating above a substrate and that are found in the aquatic bed subclass (Cowardin et al. 1979).

floodplain. The deposit of alluvium that covers a valley flat, which is the fundamental land form produced by lateral erosion of meandering streams and rivers (Thornbury 1969).

foliose. Leafy, or resembling a leaf (Bates & Jackson 1987).

forage. (v) To search for food; (n) the plant material actually consumed by a grazing animal (Lincoln, Boxshall & Clark 1982).

forested wetland. Class in the Cowardin et al. wetland classification referring to woody vegetation that is 6 m tall or taller found in all water regimes (Cowardin et al. 1979).

fresh. Term applied to water with salinity less than 0.5 ppt dissolved salts (Cowardin et al. 1979).

fresh water. Water having a salinity of less than 0.5 ppt, or alternatively, less than 2 ppt (Lincoln, Boxshall & Clark 1982).

freshwater marsh. An circumneutral ecosystem of more or less continuously waterlogged soil dominated by emerged herbaceous plants, but without a surface accumulation of peat.

fringe marsh. A saturated, poorly drained area, intermittently or permanently water covered, close to and along the edge of a land mass.

geomorphic. Referring to the shape of a land surface (Lee unpubl.)

groin. Wall or embankment, constructed at right angles to the shoreline, that projects out into the water; a shoreline protective device (California Coastal Commission 1987).

habitat. The ecological and/or physical place determined and bounded by the needs and the presence of a specific plant or animal population, which contains a particular combination of environmental conditions sufficient for that population's survival (Warner & Hendrix 1984).

haline. Term used to indicate dominance of ocean salt (Cowardin et al. 1979).

haline marshes. A saturated, poorly drained area, intermittently or permanently water covered, having aquatic and grasslike vegetation, influenced predominately by ocean salts.

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halophyte. A plant living in saline conditions; a plant tolerating or thriving in an alkaline soils rich in sodium and calcium salts; a seashore plant (Lincoln, Boxshall & Clark 1982).

harbor. A small bay or a sheltered part of a sea, lake, or other large body of water, usually well protected either naturally or artificially against high waves and strong currents, and deep enough to provide safe anchorage for ships; esp. such a place in which port facilities are furnished (Bates & Jackson 1987).

hardness. (1) A measure of the amount of calcium, magnesium, and iron dissolved in water; (2) a property of water that is roughly proportional to the ion concentration. Water from a calcareous aquifer is often hard due to calcium carbonate content. Such waters are very resistant to fluctuations in pH (Lee unpublished).

headland. A point of land, usually high and with a sheer drop, extending out into a body of water, especially the sea; a promontory (California Coastal Commission 1987).

herbaceous. A plant having the characteristics of an herb; having the texture and color of a foliage leaf (Little & Jones 1980).

herbivore. Plant-eater (Abercrombie et. al. 1983).

hogback ridge. Any ridge with a sharp summit and steep slopes of nearly equal inclination on both flanks, and resembling in outline the back of a hog (Bates & Jackson 1987).

hull. The hollow, lowermost portion of a vessel, floating partially immersed in the water and supporting the remainder of the vessel (Stein 1973).

hydric soil. Soil that is wet long enough to periodically produce anaerobic conditions, thereby influencing the growth of plants (Cowardin et al. 1979).

hydrogeomorphic unit. A land form characterized by a specific origin, geomorphic setting, water source, and hydrodynamic.

hydrophyte. Any plant growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content (plants typically found in wet habitats) (Cowardin et al. 1979).

hydroriparian. Wetlands with hydric soils or whose substrate are never dry or are dry for only a short period; usually associated with perennial or intermittent water. Vegetation, when present, consists of a predominance of obligate and preferential wet riparian plants (Johnson et al. 1984).

hyperhaline. Term used to characterize waters with salinity greater than 40 ppt (parts per thousand) due to ocean-derived salts (Cowardin et al. 1979).

hypersaline. Term used to characterize waters with salinity greater than 40 ppt due to land-derived salts (Cowardin et al. 1979).

intermittently exposed. Water regime in the Cowardin et al. wetland classification in which surface water is present throughout the year except in years of extreme drought (Cowardin et al. 1979).

intermittently flooded. Water regime in the Cowardin et al. wetland classification in which the substrate is usually exposed, but surface water is present for variable periods without detectable

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seasonal periodicity (Cowardin et al. 1979).

interstitial. Living in the pore spaces among sedimentary grains in a soft sediment (Levinton, 1982).

intertidal zone. The shore zone between the highest and lowest tides; eulittoral zone; littoral; tidal zone (Lincoln, Boxshall & Clark 1982).

intermittently exposed. Water regime in the Cowardin et al. wetland classification in which surface water is present throughout the year except in years of extreme drought (Cowardin et al. 1979).

intermittently flooded. Water regime in the Cowardin et al. wetland classification in which the substrate is usually exposed, but surface water is present for variable periods without detectable seasonal periodicity (Cowardin et al. 1979).

irregularly exposed. Water regime in the Cowardin et al. wetland classification in which the land surface is exposed by tides less often than daily (Cowardin et al. 1979).

irregularly flooded. Water regime in the Cowardin et al. wetland classification in which tidal water alternately floods and exposes the land surface less often than daily (Cowardin et al. 1979).

islet. A small or minor island (Bates & Jackson 1987).

jetty. A structure built of rock, cement, or steel projecting into a body of water; a coastal protective device (California Coastal Commission 1987).

lacustrine. Pertaining to, produced by, or inhabiting a lake or lakes (Bates & Jackson 1984).

lagoon. A shallow body of water separated from a larger bay or from the open ocean by a land form such as a sand spit or reef (California Coastal Commission 1987).

lake. Any inland body of standing water, larger and deeper than a pond. The term includes an expanded part of a river, a reservoir behind a dam, and a lake basin formerly or intermittently covered by water (Bates and Jackson 1984).

landward. (1) Toward the land or interior; (2) lying, facing, or tending toward the land or away from the coast (Stein 1973).

ledge. A narrow shelf of rock, much longer than wide, formed on a rock wall or cliff face, as along a coast by differential wave erosion of softer rocks (Bates & Jackson 1987).

lentic. Pertaining to static, calm, or slow-moving aquatic habitats; lenitic (Lincoln, Boxshall & Clark 1982).

levee. An artificial embankment along a watercourse or an arm of the sea, to protect land from flooding (Bates & Jackson 1984).

lichen. Subclass in the Cowardin class moss-lichen wetland in which areas with reindeer moss (*Cladonia rangiferina*) is dominant (Cowardin et al. 1979).

lithify. To change to stone, or to petrify; esp. to consolidate from a loose sediment to a solid rock (Bates & Jackson 1987).

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littoral. Inhabiting bottom of sea or lake near shore, roughly within a depth to which light and wave action reach. For sea, usually taken as between high tide mark and 200 meters (i.e. approximately to limit of continental shelf). For lakes, approximately down to 10 meters (Abercrombie et. al. 1983).

long-shore current. A stream of water flowing parallel to and near shore that is the result of waves hitting the beach at an oblique angle (California Coastal Commission 1987).

lotic. Pertaining to fast running-water habitats, such as rivers and streams (Lincoln, Boxshall & Clark 1982).

macroalgae. A large, macroscopic algae, typically referring to kelps.

macroinvertebrate. A large, macroscopic animal species without a spinal column, typically referring to large insects.

macrophyte. A large, macroscopic plant, used especially of aquatic forms such as kelp (Lincoln, Boxshall & Clark 1982).

main channel pool. A pool formed by mid-channel scour that encompasses greater than sixty percent of the wetted channel (California Department of Fish and Game 1991).

margin. Periphery, edge.

marine. Of, or belonging to, or caused by the sea (Bates & Jackson 1984).

marsh. A saturated, poorly drained area, intermittently or permanently water covered, having aquatic and grasslike vegetation, especially without the formation of peat (Bates & Jackson 1984).

mesohaline. Term used to characterize waters with salinity of 5 to 18 ppt due to ocean-derived salts (Cowardin et al. 1979).

mesosaline. Term used to characterize waters with salinity of 5 to 18 ppt due to land-derived salts (Cowardin et al. 1979).

mesoriparian. Wetlands with nonhydric soils and whose substrate is dry seasonally; usually associated with intermittent water or high-elevation ephemeral wetlands. Vegetation, when present, consists of a mixture of obligate, preferential, and facultative riparian plants (Johnson et al. 1984).

mixohaline. Term used to characterize water with salinity of 0.5 ppt to 30 ppt due to ocean-derived salts (Cowardin et al. 1979).

mixosaline. Term used to characterize water with salinity of 0.5 to 30 ppt due to land-derived salts (Cowardin et al. 1979).

mollusk. Subclass in the Cowardin et al. wetland classification referring to reef systems formed by members of the invertebrate phylum Mollusca (Cowardin et al. 1979).

montane. Of, pertaining to, or inhabiting cool upland slopes below the timber line, characterized by the dominance of evergreen trees (Bates & Jackson 1980).

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montane alkali lakes. Lakes with a water pH greater than 7 found in cool, upland habitats below the timber line.

montane freshwater lakes. Circumneutral lakes found in cool, upland habitats below the timber line.

moss. Subclass in the Cowardin class moss-lichen wetland in which areas with mosses, typically peats, are dominant (Cowardin et al. 1979).

moss-lichen wetland. Class in the Cowardin et al. wetland classification that includes areas where mosses or lichens cover substrates other than rock and where emergents, shrubs, or trees make up less than 30% of the areal cover. The only water regime is saturated (Cowardin et al. 1979).

mud. Wet soft earth composed predominantly of clay and silt-fine mineral sediments. Also refers to a subclass within the Cowardin et al. wetland classification system (Cowardin et al. 1979).

natural ecosystem. An ecosystem which develops in the absence of any major unnatural disturbance (Little & Jones 1980).

needle-leaved deciduous. Subclass in the Cowardin et al. wetland classification referring to wetlands where trees or shrubs are predominantly conifers that shed their leaves once a year.

needle-leaved evergreen. Subclass in the Cowardin et al. wetland classification referring to wetlands where trees or shrubs are predominantly conifers that retain their leaves for longer than one year.

nomenclature. The naming of things, particularly organisms, extant or extinct; in [biology], refers to the correct usage of scientific names used in taxonomy (Little & Jones 1980).

nonpersistent. Subclass in the Cowardin et al. wetland classification referring to wetlands dominated by plants which fall to the surface of the substrate or below the surface of the water at the end of the growing season, so that, at certain seasons of the, there is no obvious sign of emergent vegetation (Cowardin et al. 1979).

nonpersistent emergent. Emergent hydrophytes whose leaves and stems breakdown at the end of the growing season so that most above-ground portions of the plants are easily transported by currents, waves, or ice. The breakdown may result from normal decay or the physical force of strong waves or ice. At certain seasons of the year there are no visible traces of the plants above the surface of the water (Cowardin et al. 1979).

ocean. The continuous salt-water body that surrounds the continents and fills the Earth's great depressions; also, one of its major geographic divisions (Bates & Jackson 1987).

offshore. (1) Off or away from shore; (2) at a distance from shore (Stein 1973).

oil shale. A black or dark brown shale or siltsone rich in bitumens, from which shale oil is obtained by destructive distillation (Stein 1973).

oligohaline. Term used to characterize water with salinity of 0.5 to 5.0 ppt due to ocean-derived salts (Cowardin et al. 1979).

oligosaline. Term used to characterize water with salinity of 0.5 to 5.0 ppt due to land-derived

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salts (Cowardin et al. 1979).

organic. Subclass in Cowardin et al. wetland classification referring to unconsolidated material smaller than stones that is predominantly organic in origin (Cowardin et al. 1979).

organic soil. Soil composed of predominantly organic rather than mineral material (= histosol).

paddleboard. A type of surfboard with one end rounded and the other tapered to a point, used chiefly in surfing and often in life-saving (Stein 1973).

palustrine. Pertaining to wet or marshy habitats (Lincoln, Boxshall & Clark 1982).

permanently flooded. Water regime in the Cowardin et al. wetland classification in which water covers the land surface throughout the year in all years (Cowardin et al. 1979).

persistent. Subclass in the Cowardin et al. wetland classification referring to wetland dominated by species that normally remain standing at least until the beginning of the next growing season, found only in the estuarine and palustrine systems (Cowardin et al. 1979).

persistent emergent. Emergent hydrophytes that normally remain standing at least until the beginning of the next growing season (e.g., bulrushes and cattails) (Cowardin et al. 1979).

petroleum-affected. Influenced by an oily, thick, flammable substance that is usually formed from a mixture of various hydrocarbons.

photic zone. The depth zone in the ocean extending from the surface to that depth permitting photosynthesis (Levinton 1982).

phreatophyte. A perennial plant which is very deep rooted, deriving its water from a more or less permanent, subsurface water supply; it is thus not dependent upon annual rainfall for survival (Little & Jones 1980).

phytogeography. The study of the distribution of plants (Little & Jones 1980).

phytoplankton. The photosynthesizing organisms residing in the plankton (Levinton, 1982).

pier. A long narrow wharf extending out from the shore into the water, serving as a berthing or landing place for vessels or as a recreational facility (Bates & Jackson 1980).

piling. A structure or group of piles (Bates & Jackson 1980).

plains. Any flat area, large or small, at a low elevation; specif. an extensive region of comparatively smooth and level or gently undulating land, having few or no prominent surface irregularities but sometimes having a considerable slope, and usually at a low elevation with reference to surrounding areas. A plain may be either forested or bare of trees, and may be formed by deposition or by erosion (Bates & Jackson 1980).

platform. Any level or nearly level surface, ranging in size from a terrace or bench to a plateau or peneplain (Bates & Jackson 1984).

playa lake. A shallow, intermittent lake in an arid region, occupying a playa in the wet season but drying up in the summer; an ephemeral lake that upon evaporation leaves or forms a playa (Bates & Jackson 1984).

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polyhaline. Term used to characterize water with salinity of 18 to 30 ppt due to ocean-derived salts (Cowardin et al. 1979).

polysaline. Term used to characterize water with salinity of 18 to 30 ppt due to land-derived salts (Cowardin et al. 1979).

pond. A natural body of standing fresh water occupying a small surface depression, usually smaller than a lake and larger than a pool (Bates & Jackson 1980).

port. A place along a coast in which ships may take refuge from storms; harbor (Stein 1973).

pool. A body of impounded water, artificially confined above a dam or the closed gates of a lock (Bates & Jackson 1984).

ramp. The steepened segment of a thrust fault, especially where a bedding thrust or decollement changes from a stratigraphically lower to a higher bed (Bates and Jackson 1984).

rampart. A wall-like ridge of unconsolidated material formed along a beach by the action of waves and currents (Bates & Jackson, 1987).

rapids. A part of a stream where the current is moving with a greater swiftness than usual and where the water surface is broken by obstructions but without a sufficient break in slope to form a waterfall, as where the water descends over a series of small steps. It commonly results from a sudden steepening of the stream gradient, from the presence of a restricted channel, or from the unequal resistance of the successive rocks traversed by the stream (Bates & Jackson 1980).

reef.¹ A ridgelike or moundlike structure, layered or massive, built by sedentary calcereous organisms, especially corals, and consisting mostly of their remains; it is wave-resistant and stands above the surrounding contemporaneously deposited sediment. Also, such a structure built in the geologic past and now enclosed in rock, commonly of differing lithology (Bates & Jackson 1984).

reef.² A class in the Cowardin et al. wetland classification referring to ridge-like or mound-like structures formed by the colonization and growth of sedentary invertebrates (Cowardin et al. 1979).

regularly flooded. Water regime in the Cowardin et al. wetland classification in which tidal water alternately flood and expose the land surface at least once daily (Cowardin et al. 1979).

reservoir. A pond or lake, natural or artificial, from which water may be withdrawn for irrigation or water supply (Bates & Jackson 1984).

revetment. A structure built along the coast to prevent erosion and other damage by wave action; similar to a sea wall (California Coastal Commission 1987).

riffle. A shallow rapids where the water flows swiftly over partially or completely submerged obstructions to produce surface agitation, but standing waves are absent (American Fisheries Society 1985).

***riparian.¹** Pertaining to the banks and other adjacent terrestrial (as opposed to aquatic) environs of freshwater bodies, watercourses, estuaries, and surface-emergent aquifers (springs, seeps, oases), whose transported fresh waters provide soil moisture sufficiently in excess of that otherwise available through local precipitation to potentially support the growth of mesic vegetation (Warner & Hendrix 1984).

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riparian.² On or pertaining to land adjacent to riverine and estuarine channels, lacustrine beds, or oases and other sites where surface water and/or groundwater occurs in excess of on-site precipitation; occupied by biotic communities differing in species composition and/or population densities from those of the surrounding uplands due to the substrate: (a) being or periodically covered with water; and/or (b) having higher soil moisture; or (c) in the case of rocky banks or cliffs, existing plant and animal species are dependent on a proximity to water (Johnson et al. 1984).

rip-rap. Boulders or rubble used to construct a jetty or revetment (California Coastal Commission 1987).

river. A natural or human modified-watercourse that contains water for at least part of the year.

river banks. The portion of the channel cross section that restricts lateral movement of water at normal discharges. Banks often have a gradient steep than 45° and exhibit a distinct break in slope from the stream bed (American Fisheries Society 1985).

river channels. Natural or artificial open conduits which continuously or periodically contain moving water, or which forms a connection between two bodies of water (Langbein and Iseri 1960).

rock bottom. Class in the Cowardin et al. wetland classification referring to all wetlands and deepwater habitats with substrates having an areal cover of stones, boulders, or bedrock 75% or greater and vegetative cover of less than 30%.

rocky shore. Class in the Cowardin et al. wetland classification referring to all wetland environments characterized by bedrock, stones, or boulders which singly or in combination have an areal cover of 75% or more and an areal coverage by vegetation of less than 30% (Cowardin et al. 1979).

rooted vascular. Subclass in the Cowardin et al. wetland classification referring to a large array of vascular plants rooted in a substrate and that are found in the aquatic bed subclass (Cowardin et al. 1979).

rubble. Subclass in Cowardin et al. wetland classification referring to classes with less than 75% areal cover of bedrock, but stones and boulders alone, or in combination with bedrock, cover 75% or more of the surface (Cowardin et al. 1979).

runs. An area of swiftly flowing water, without surface agitation or waves, which approximates uniform flow and in which the slope of the water surface is roughly parallel to the overall gradient of the stream reach (American Fisheries Society 1985).

sag pond. A small body of water occupying an enclosed depression or sag formed where active or recent fault movement has impounded drainage; specifically one of many ponds and small lakes along the San Andreas Fault in California (Bates & Jackson 1984).

saline. General term for waters containing various dissolved salts. Use of saline can be restricted to inland waters where the ratios of the salts often vary; the term haline can be applied to coastal waters where the salts are roughly in the same proportion as found in diluted sea water (Cowardin et al. 1979).

saline marsh. A saturated, poorly drained area, intermittently or permanently water covered, having aquatic and grasslike vegetation whose water chemistry contains various dissolved salts.

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salinity. The total amount of solid material in grams contained in 1 kilogram of water when all the carbonate has been converted to oxide, the bromine and iodine replaced by chlorine, and all the organic matter completely oxidized (Cowardin et al. 1979).

sand. Subclass in the Cowardin et al. wetland classification referring to unconsolidated particles smaller than stones, sometimes intermixed with finer sediments (Cowardin et al. 1979).

saturated. Water regime in the Cowardin et al. wetland classification in the substrate is saturated to the surface for extended periods during the growing season, but surface water is seldom present (Cowardin et al. 1979).

scour pools. A pool formed by flow directed either laterally or obliquely against a partial channel obstruction or bank (California Department of Fish and Game 1991).

scrub-shrub wetland. Class in the Cowardin et al. wetland classification referring to areas dominated by woody vegetation less than 6 m (20 feet) tall (Cowardin et al. 1979).

sea cave. A cleft or cavity in the base of a sea cliff, excavated where wave action has enlarged natural lines of weakness in easily weathered rock; it is usually at sea level and affected by the tides (Bates & Jackson 1987).

seagrass. Any taxon of the vascular plant family Zosteraceae.

seasonally flooded. Water regime in the Cowardin et al. wetland classification in which surface water is present for extended periods especially early in the growing season, but is absent by the end of the season in most years (Cowardin et al. 1979).

sea stack. A small, steep-sided rocky projection above sea level near a cliffed shore (California Coastal Commission 1987).

sea wall. A long, steep-faced embankment of shingle or boulders, built by powerful storm waves along a seacoast at the high-water mark (Bates and Jackson 1984); a man-made wall or embankment of stone, reinforced concrete, or other material along a shore to prevent wave erosion (Bates & Jackson 1987).

seaward. (1) toward the sea; (2) facing or tending toward the sea; (3) coming from the sea; (4) the direction toward the sea or away from land (Stein 1973).

sediment. Fine-grain material and organic material in suspension, in transit, or deposited by air, water, or ice on the earth's surface (California Coastal Commission 1987).

sedentary. Attached to the substrate; not free-living (Lincoln, Boxshall & Clark 1982).

seep. An area of minor groundwater outflow onto the land surface or into a stream channel or other waterbody. Flows are usually too small to be a spring (American Fisheries Society 1985).

semipermanently flooded. Water regime in the Cowardin et al. wetland classification in which surface water persists throughout the growing season in most years (Cowardin et al. 1979).

sessile. Being immobile due to an attachment to a substratum (Levinton 1982).

shore. The narrow strip of land immediately bordering any body of water, esp. a sea or a large lake (Bates & Jackson 1987).

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slope. The inclined surface of any part of the Earth's surface; also, a broad part of a continent descending toward an ocean (Bates & Jackson 1980).

slurry. A suspension of a solid in a liquid (Stein 1973).

socioeconomic values (ecosystem). Society's perceptions of the worth of an ecosystem, typically stemming from whether the system provides a form or pleasure or recreation, such as fishing, boating, etc.

spoil. Overburden, nonore, or other waste material removed in mining, quarrying, dredging, or excavating

spring. A place where ground water flows naturally from a rock or the soil into the land surface or into a body of surface water. Its occurrence depends on the nature and relationship of rocks, especially permeable and impermeable strata, on the position of the water table, and on the topography (Bates & Jackson 1980).

cold spring. A spring whose water has a temperature appreciably below the mean annual atmospheric temperature in the area (Bates & Jackson 1980).

hot spring. A thermal spring whose temperature is above that of the human body (Bates & Jackson 1980).

stream. Any body of running water that moves under gravity to progressively lower levels, in a relatively narrow but clearly defined channel on the surface of the ground, in a subterranean cavern, or beneath or in a glacier (Bates & Jackson 1980).

stream bed. Class in the Cowardin et al. wetland classification referring to wetlands contained within the intermittent subsystem of the riverine system and all channels of the estuarine system or of the tidal subsystem of the riverine system (Cowardin et al. 1979).

stream channel. The bed where a natural stream of water runs or may run; the long narrow depression shaped by the concentrated flow of a stream and covered continuously or periodically by water (Bates & Jackson 1980).

submersed. Under water, submerged (Little & Jones 1980).

subtidal. Water regime in the Cowardin et al. wetland classification in which the substrate is permanently flooded with tidal water (Cowardin et al. 1979).

suffrutescent. A perennial vascular plant with a woody base.

sulfur-affected. Influenced by the non-metallic element sulfur.

surf. The waves breaking on shore (Lincoln, Boxshall & Clark 1982).

surfcasting. The act, technique, or sport of fishing by casting from the shoreline into the sea, usually using heavy-duty tackle (Stein 1973).

surge channel. A narrow gap in rocky intertidal areas through which waves surge (California Coastal Commission 1987).

swamp. Wet, spongy ground, saturated or intermittently inundated by standing water, typically

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dominated by woody plants but without an accumulation of surface peat (Lincoln, Boxshall & Clark 1982).

temporarily flooded. Water regime in the Cowardin et al. wetland classification in which surface water is present for brief periods especially early in the growing season, but the water table usually lies well below the soil surface for most of the year (Cowardin et al. 1979).

tenaja. Pools in seasonal streams that may support a flora similar to vernal pools upon desiccation.

terrace. A relatively level bench or steplike surface breaking the continuity of a slope. The term is applied to both the lower or front slope (the riser) and the flat surface (the tread) (Bates & Jackson 1984).

tetrapod. A four-limbed rip-rap formed from cement.

thrillcraft. *Referring to any motorized vehicle that attains great speeds on open water, often specifically to jet skis (Ferren, Fiedler & Leidy 1994).*

tidal. Water regime in the Cowardin et al. wetland classification are largely determined by oceanic tides (Cowardin et al. 1979).

tide. The periodic rise and fall of the ocean water masses and atmosphere, produced by gravitational effects of the moon and sun on the Earth (Lincoln, Boxshall & Clark 1982).

tide cycle. The duration of a given tidal sequence, as for example a lunar month or a tidal day (Lincoln, Boxshall & Clark 1982).

tide gate. A gate through which water flows when the tide is in one direction and which closes automatically when the tide is in the opposite direction (Stein 1973).

tideland. The coastal area of land that is regularly covered and uncovered by the rise and fall of a normal daily tide (Lincoln, Boxshall & Clark 1982).

tide pool. Habitat in the rocky intertidal zone that retains some water at low tide (California Coastal Commission 1987).

tidal flat. An extensive flat tract of land alternatively covered and uncovered by the tide, and comprising mostly unconsolidated mud and sand; tide flat (Lincoln, Boxshall & Clark 1982).

tidal marsh. A low elevation marshy coastal area formed of mud and the root mat of halophytic plants, regularly inundated during high tide (Lincoln, Boxshall & Clark 1982).

turbidity. The weight of particulate matter per unit volume of sea water (Levinton 1982).

unconsolidated bottom. Class in Cowardin et al. wetland classification referring to all wetland and deepwater habitats with at least 25% cover of particles smaller than stones, and a vegetative cover less than 30% (Cowardin et al. 1979).

unconsolidated shore. Class in Cowardin et al. wetland classification referring to all wetland habitats having three characteristics: (1) unconsolidated substrates with less than 75% areal cover of stones, boulders, or bedrock; (2) less than 30% areal cover of vegetation other than pioneering plants; and (3) any of the following water regimes: irregularly exposed, regularly flooded, irregularly

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flooded, seasonally flooded, temporarily flooded, intermittently flooded, saturated, or artificially flooded (Cowardin et al. 1979).

upland. The ground above a floodplain; that zone sufficiently above and/or away from transported waters as to be dependent upon local precipitation for its water supplies (Warner & Hendrix 1984).

vegetated. Subclass in the Cowardin et al. wetland classification referring to nontidal areas exposed for a sufficient period to be colonized by herbaceous annuals or seedling herbaceous perennials (pioneer plants) (Cowardin et al. 1979).

vegetated streambed. Subclass in the class streambed in the Cowardin et al. wetland classification referring to streambeds exposed long enough to be colonized by herbaceous annuals or seedling herbaceous perennials (pioneer plants) (Cowardin et al. 1979).

vernal pool.¹ A temporary pool formed during spring from meltwater or floodwater (Lincoln, Boxshall & Clark 1982).

washes. A watercourse associated with an alluvial fan, stream, or river channel. Washes are often associated with arid environments and are characterized by large, high energy discharges with high bed-material load transport. Washes are often intermittent and their beds sparsely vegetated.

watercraft. Any boat or ship; boats and ships collectively (Stein 1973).

watershed. A geographical region which drains into a particular body of water (Little & Jones 1980).

***water table**¹. The upper surface of a zone of saturation. No water table exists where that surface is formed by an impermeable body (Cowardin et al. 1979).

water table.³ The surface that divides the zone of aeration from the zone of saturation. The surface below which all the pore space in rocks is saturated with water (Botkin & Keller, 1989).

wave cut platform. A gently sloping surface produced by wave erosion, extending far into the sea or lake from the base of the wave cut cliff (Bates & Jackson, 1987).

***wetland**¹. Wetlands are 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. For the purposes of this classification wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year (Cowardin et al. 1979).

wetland². A zone that is periodically, seasonally, or continually submerged or which has high soil moisture; which may have both aquatic and riparian components, and which is maintained by transported water supplies significantly in excess of those otherwise available through local precipitation (Warner and Hendrix 1984).

weed. Any plant growing where it is not wanted (Lincoln, Boxshall & Clark 1982).

well. An artificial excavation (pit, hole, tunnel) generally cylindrical in form and often walled in, sunk (drilled, dug, driven, bored or jetted) into the ground to such a depth as to penetrate water yielding rock or soil and to allow the water to flow or to be pumped to the surface (Bates & Jackson

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1980).

worm. Subclass in the Cowardin et al. wetland classification referring to large colonies of Sabellariid worms living in individual tubes constructed from cemented sand grains. Worm reefs are generally confined to tropical waters (Cowardin et al. 1979).

wrack. Seaweed or other marine vegetation cast on shore (Stein 1973).

wreckage. Remains or fragments of something that has survived a wreck (Stein 1973).

xeroriparian. Mesic to xeric habitat-type with average annual moisture higher than surrounding uplands, but provided with surface moisture in excess of local rainfall only on infrequent occasions (usually for less than one month per year). Vegetation, when present, consists of a mixture of preferential, facultative, and non-riparian plants (Johnson et al. 1984).

zonation. Occurrence of single species or groups of species in recognizable bands that might delineate a range of water depth or a range of height in the intertidal zone (Levinton 1982).