

CHAPTER IX

GLOSSARY

- Acre-foot:** The volume of water (325,851 gallons) that would cover one acre to a depth of one foot.
- ADT:** Average daily traffic volume.
- Air Quality Management Program/Plan:** A federally-mandated plan identifying strategies for controlling air pollution.
- Allocation Program:** A decision-making model used by the District that contains the following three components: (1) A limit on how much total water may be produced annually from the Monterey Peninsula Water Resource System, given the need to protect instream fish and wildlife resources, protect riparian resources, provide for drought protection, and prevent seawater intrusion; (2) A scheme for allocating Cal-Am water to each of the jurisdictions within the Cal-Am service area. (3) A set of mechanisms for monitoring jurisdictional water use, ensuring jurisdictional compliance with the allocation scheme, and making adjustments to the allocation scheme over time.
- Alluvial:** Relating to, composed of, or found in clay, silt, sand, gravel, or similar material deposited by running water.
- AMBAG:** Association of Monterey Bay Area Governments.
- Anadromous fish:** Any species that lives as an adult in the ocean and returns to freshwater to spawn (e.g., steelhead, salmon, striped bass, American shad).
- AQ1:** Subbasin of the Carmel Valley Aquifer extending westward from San Clemente Dam to Robles del Rio gauging station.
- AQ2:** Subbasin of the Carmel Valley Aquifer extending from Robles del Rio gauging station to the Narrows.
- AQ3:** Subbasin of the Carmel Valley Aquifer extending from the Narrows to Near Carmel gauging station.
- AQ4:** Subbasin of the Carmel Valley Aquifer from Near Carmel gauging station to the river mouth.
- Aquifer drawdown model:** A computer code used to simulate the changes in depth to groundwater.
- Aquifer:** A water-bearing formation consisting of rock, sand, clay, or gravel.
- Baseline Production/Consumption Level A (18,400 acre-feet/17,112 acre-feet):** The assumed January 1988 Cal-Am production level.
- Baseline Production/Consumption Level B (16,700 acre-feet/15,572 acre-feet):** The assumed January 1988 Cal-Am production level with a nine percent reduction to reflect the Monterey Peninsula Water Management District's water conservation goal.

- Bay tidal marshes:** Wetland areas in which the water level fluctuates with the raising and lowering of the tides.
- Board:** The Monterey Peninsula Water Management District's seven-member elected Board of Directors.
- Brackish water:** A mixture of sea and freshwater.
- Brood:** Fish born in the same year.
- Buildout:** The total unconstrained development of all planned growth within the Cal-Am service area.
- Caltrans:** California State Department of Transportation.
- Cal-Am:** California-American Water Company, a privately owned and operated water company, which is the largest of the water distribution systems located within the MPWMD boundaries.
- Carmel River Management Program/Plan (CRMP):** A 10-year plan adopted by the District in 1983 to manage erosion along the banks of the Carmel River between Carmel Bay and Klondike Canyon.
- CCRWQCB:** Central Coast Regional Water Quality Control Board.
- CDF:** California Department of Forestry and Fire Protection.
- CDFG:** California Department of Fish and Game:
- CEQA:** California Environmental Quality Act.
- cfs:** Cubic feet per second.
- Closed-cone conifer forest:** Disjunct stands of closely related closed-cone pines and cypresses which occur along the California coast. Species include Bishop Pine, Gowen Cypress, and Monterey Pine.
- Conservation:** Mechanical or behavioral reductions in potable water conservation resulting from a structured program.
- CO:** Carbon monoxide; a gaseous compound containing one molecule of carbon and one of oxygen.
- Coastal dune:** Vegetation community found grown on the sandy dunes just inland from the coast.
- Community vigor:** The overall health or fitness of a biological system.
- CPUC:** California Public Utilities Commission.
- CRSA:** Carmel River Steelhead Association.

CUSD: Carmel Unified School District.

CVSIM: Carmel Valley Simulation Model

Daytime stomatal closure: Typical plant response to low soil moisture conditions.

Demand, average: The annual consumption of water calculated by the CVSIM model that includes increases in the daily nominal demand because of adjustments for dry and wet weather and decreases because of rationing.

Demand, nominal: The annual consumption of water equal to the production defined by each of the water supply options. For example, 18,400 acre-feet for Water Supply Option I.

Desiccation: The act of drying-up.

District: Monterey Peninsula Water Management District.

Drawdown: A decrease in the elevation of the water table of an aquifer in response to pumping.

Drip line irrigation: An irrigation technique in which water drips from selected locations.

Drought reserve: Water that is not available for allocation or use reserved to minimize water supply shortfalls during times of drought. The drought reserve is not a discrete supply of water, but is a method of calculating water which would be available for use during a drought.

Drought-tolerant species: Plants that are tolerant of low soil moisture conditions for extended periods of time.

Dry season: The period of the year with the lowest rainfall; generally the summer.

DU: Dwelling unit.

DWR: California Department of Water Resources.

Ecotonal edge: The edge or transition area between two or more ecological zones, vegetation types, or habitats.

EPA: United States Environmental Protection Agency.

Evapotranspiration: The loss of water from the soil by both evaporation and by transpiration from the plants growing thereon.

Extractable storage: Aquifer storage that can be physically removed.

FEMA: Federal Emergency Management Agency.

FERC: Federal Energy Regulatory Commission

Firm Yield: See Long-Term Yield

- Fiscal year:** The period from July 1st of one calendar year to June 30th of the following calendar year.
- Fixed-formula allocation:** The concept of allocating water on the basis of a specific formula which is periodically reviewed and revised by the District Board (see Discretionary allocation formula).
- Fixed-year monitoring:** The practice of monitoring jurisdictional compliance with the District's Allocation Program by means of an annual review of jurisdictional water consumption for the preceding water year (i.e., July 1 to June 30).
- Freshet:** Overflowing of a stream caused by heavy rains.
- Fry:** Very small, recently-hatched steelhead. The term is commonly applied to fish up to about a month old and 1½ inches long.
- Geohydrologic:** Pertaining to the character, source, and mode of occurrence of underground water.
- Grace Amount:** The concept of allowing any jurisdiction whose water consumption is at or above its maximum allocation to temporarily use a portion of the total remaining Cal-Am water available.
- Groundwater:** Non-saline and saline water beneath the natural surface of the ground, whether or not flowing through known and definite channels.
- Groundwater basin:** An interrelated set of water-bearing strata of permeable rock, sand, or gravel.
- Holman Highway:** State Route 68 between Highway 1 and Pacific Grove.
- Humus:** Material resulting from the partial decomposition of plant or animal matter and forming the organic portion of soil.
- Hydraulic conductivity:** A measure of the ease with which groundwater moves through an aquifer.
- Hydrologic record:** A recorded period of hydrologic events, such as streamflow.
- Hydrophytic:** Growing in water or soil too waterlogged for most plants to survive.
- Image well theory:** A technique used for analyzing pumping from a groundwater well in proximity to a geologic barrier.
- Infiltration:** The movement of water from the ground surface into the soil.
- Initial saturated thickness:** The vertical thickness of the saturated portion of a water-bearing material at a certain point in time.
- Intensification of use:** An increase in water consumption through an existing water meter due to additional occupancy, remodels, additions, or modified uses of the property.

Interim Relief Plan (IRP): A set of programs adopted by the MPWMD Board in September 1988 in recognition of the need to ameliorate environmental impacts for the period of time prior to augmentation of the water supply for the Carmel River and the Monterey Peninsula. The IRP includes programs to rescue and rear fish stranded in the Carmel River, to irrigate riparian vegetation along the Carmel River, and to release water from the San Clemente Dam.

Intermittent stream: A stream that flows for only a portion of the year.

Juvenile steelhead: Small steelhead, less than one year old. Also called young-of-the year.

Jurisdictions: The eight local agencies designated to receive a separate allocation in the District's Water Allocation Program. These agencies are the City of Carmel-by-the-Sea, the City of Del Rey Oaks, the City of Monterey, the City of Pacific Grove, the City of Sand City, the City of Seaside, the County of Monterey, and the Monterey Peninsula Airport District.

Lagoon: Carmel River Lagoon

Leaching: The process of removing soluble material from a parent material, often by percolation of liquid.

Long-term yield: The amount of water that can be withdrawn from an aquifer without causing long-term decline in the water table or piezometric surface. Long-term yield is roughly equal to the net recharge rate of the aquifer.

LOS: Level of service; a qualitative measure of traffic-operating characteristics defined as the ratio of volume to capacity (V/C). Roadway segments are assigned letter designations from A through F, representing progressively worsening traffic conditions.

Low dawn water potential: Plant condition indicating low soil moisture conditions.

Lower Carmel Valley: That section of the Carmel Valley downstream of the Narrows to Carmel Bay which contains Carmel Valley Aquifer Subbasins AQ3 and AQ4.

LPNF: Los Padres National Forest.

Marsh: Soft, wet areas which can include wetlands and in some instances willow scrub riparian vegetation.

MBUAPCD: Monterey Bay Unified Air Pollution Control District.

MCEH: Environmental Health Division of the Monterey County Health Department.

MCFCWCD: Monterey County Flood Control and Water Conservation District.

Mean monthly flows: Average flow volumes for a given month for the simulated period (1902-1987).

MGD: Millions of gallons per day.

- Mineral alluvial deposition:** Clay, silt, sand, or gravel carried to a site by flowing water which then drops out of the mouth of the water column and is left after the water recedes.
- Monterey County Water Conservation Plan:** A plan adopted by Monterey County and the major water providers in the county that establishes water conservation goals for each area of the county.
- MPPRPD:** Monterey Peninsula Regional Park District.
- MPUSD:** Monterey Peninsula Unified School District.
- MPWMD Law:** The District's enabling legislation (Statutes of 1977, Chapter 527, found in *West's California Water Code Appendix* §108-1 to 122-100).
- MPWMD Rules and Regulations:** The collection of ordinances under which the District operates.
- MPWMD:** Monterey Peninsula Water Management District.
- MRWPCA:** Monterey Regional Water Pollution Control Agency
- MPWRS:** Monterey Peninsula Water Resource System. The MPWRS consists of the Carmel River, the Carmel Valley Aquifer, and the Seaside Coastal Groundwater Subbasin.
- Multistoried forest:** A stand of vegetation with numerous vegetation canopy layers ranging from low-growing herbaceous plants to tall trees.
- MWC:** Mutual water company.
- Narrows:** The location in Carmel Valley in the vicinity of Scarlett Road that separates the Upper Carmel Valley from the Lower Carmel Valley.
- NEPA:** National Environmental Protection Act.
- NMFS:** National Marine Fisheries Service.
- Non-Cal-Am Groundwater Users:** Individual private wells or small distribution systems drawing from the Monterey Peninsula Water Resource System.
- Non-essential water use:** The indiscriminate or excessive use of potable water for purposes which are unproductive or do not reasonably sustain economic benefits or life forms.
- Nonusable storage:** Aquifer or groundwater retained in an aquifer to repel seawater intrusion; this water is not available for withdrawal.
- North Coast Central Air Basin:** The air basin containing the Monterey Peninsula, as defined by the California Air Resources Board.
- NOx:** Nitrogen oxide.
- No-flow periods:** Periods when streamflow is non-existent.

- Overstory:** The tall, woody trees which provide the upper canopy of foliage in a forest and generally shade lower levels.
- Ozone:** A gaseous compound containing three molecules of oxygen; a major component of photochemical smog.
- Package sewer system:** A complete, pre-designed sewage treatment plant
- PBCSD:** Pebble Beach Community Services District.
- PGUSD:** Pacific Grove Unified School District.
- Phreatophytic:** A deep-rooted plant that obtains its water from the water table or the layer of soil just above it.
- Piezometric surface:** A line passing through all points to which water would rise in wells penetrating a confined aquifer.
- Plant water stress model:** A computer model used to simulate plant stress caused by deficiencies of water.
- Plant water stress:** Loss of plant vigor or fitness caused by a low soil moisture and the resultant loss of turgor pressure and eventual wilting.
- PM₁₀:** Particulate matter less than 10 microns in diameter which can be inhaled and are therefore considered hazardous to human health.
- Potable:** Suitable for drinking.
- Production:** The amount of water extracted by a water distribution system from all sources of water supply.
- Pumping capacity:** The capability of a well to produce water.
- Pumping regime:** The pattern of groundwater pumping.
- Rationing goal:** The percentage reduction in water consumption that is or would be included in a water rationing ordinance.
- Rearing habitat:** Habitat with suitable environmental conditions necessary for juvenile steelhead rearing. This requires certain depths, velocities, streambottom, and water temperature conditions.
- Recharge:** The process by which an aquifer receives additional water from outside sources.
- Reclamation:** The recovery of subpotable or wastewater sources so as to substitute this supply for irrigation applications currently using potable supply.
- Repeat Spawners:** Steelhead that live after their first spawning, return to sea, and come back to spawn again in subsequent years; most steelhead die after their first spawn.

- Reservoir effects:** Modifications of stream flows due to the operation of one or more reservoirs.
- Riparian forest:** The terrestrial environs adjacent to freshwater bodies such as rivers and streams. Riparian vegetation found in these forests relies on these water bodies to provide soil moisture in excess of that otherwise available through local precipitation.
- Riparian scrub:** Low growing (one- to three-meter) vegetation growing in riparian areas.
- Riparian vegetation:** Plants found growing at the edges of freshwater bodies. Riparian vegetation requires moist year-round soil conditions such as those found near a river.
- Riparian woodland thicket:** Low- to middle-canopy vegetation growing in riparian areas.
- Riparian:** Relating to or living or located on the bank of a natural watercourse.
- Risk/uncertainty:** The concept that the occurrence of an event is not certain. Risk/uncertainty is usually expressed as a probability.
- River ripple bars:** Sections of the river at which the water tumbles over river cobble and gravel at shallow depths.
- Rolling-year monitoring:** The practice of monitoring jurisdictional compliance with the District's Allocation Program by means of a monthly review of jurisdictional water consumption for the preceding 12-month period.
- ROGS:** Reactive organic gases.
- Runoff:** The movement of excess precipitation across the ground.
- Salinity level:** The level of salts in a body of water.
- Seawater intrusion:** The movement of saline water in to non-saline aquifers.
- SCS:** United States Soil Conservation Service.
- Seedling survival:** The percentage or number of new plants, growing from seed, which are alive at the end of their first growing season.
- Septic system:** A small sewage disposal system generally serving a single user.
- Shortfall:** The amount by which the monthly or annual supply, or production, is less than the corresponding demand, as calculated by the CVSIM model. When expressed as a percentage, the shortfall is a percentage of the demand.

Significant Environmental Impact: According to §15382 of the *CEQA Guidelines*, a "significant effect on the environment means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant."

Smolt: A juvenile steelhead that has adapted to seawater.

Soil column: The vertical alignment of soil.

Special-status plant species: Special-status plant species are defined to include species that are federally listed, proposed, or candidates for threatened and endangered status (50 CFR 37958-37967); listed by the State of California as threatened and endangered species or are candidates for listing (California Department of Fish and Game 1987); California Native Plant Society (CNPS) rare and endangered species (Smith and Berg 1988).

Special-status wildlife species: Special-status wildlife species are defined to include species that are federally-listed threatened and endangered species (50 CFR 37958-37967); federal candidates for listing as threatened or endangered (54 F12 554-579); listed by the State of California as threatened and endangered species (California Administrative Code, Title 14, Section 670.5); identified by the Department of Fish and Game as species of special concern (Remsen 1978, Williams 1986); or identified by the Department of Fish and Game as fully protected species in California.

Species dispersal-germination phenology: The seasonal pattern of plant seed development, dispersal, and germination.

Specific yield: The quantity of water yielded by gravity drainage from water-bearing material.

Spray cannon irrigation: An irrigation technique using a large nozzle to spray large quantities of water over a large area.

SR 1: State Route 1

SR 218: State Route 218

SR 68: State Route 68

Storage capacity: The total water-bearing capacity of an aquifer.

Student yield: The number of students generated by a given unit of development (i.e., per dwelling unit).

Sub-potable water: Water which is not fit for human consumption without treatment, including reclaimed water.

Surface flows: Water flow across the ground surface, generally in stream channels.

SWRCB: State Water Resources Control Board.

System capacity: The amount of water in acre-feet that a water distribution system is permitted by the District to produce annually. Capacity is based on the cumulative sustained yield of wells adjusted for periodic lowering of the water table and the projected yield of other sources of supply.

Transient occupancy taxes: Taxes levied on visitor accommodations (i.e., hotels and motels) by local jurisdictions.

Tributary flows: Streamflows from small streams tributary to a main stream or river.

Typical dry season: An average condition relating to the portion of the year with minimum rainfall.

Unaccounted-for water: The difference between the amount of water produced by a water distribution system and the amount of water sold as metered consumption. The difference (which is attributable largely to system losses caused by leakage, fire flows, and meter error) is usually stated as a percentage of the water production.

Understory: The short, shade-tolerant, woody and herbaceous vegetation growing in the lower canopy of the forest.

Upland vegetation: Vegetation growing in areas outside wetland and riparian zones which relies solely on precipitation as its source of water.

Upper Carmel Valley: The section of the Carmel Valley above the Narrows and below San Clemente Dam which includes Carmel Valley Aquifer Subbasins AQ1 and AQ2.

Usable storage: Aquifer storage that is available for withdrawal.

USFS: United States Forest Service.

USFWS: United States Fish and Wildlife Service.

USGS: United States Geological Survey.

V/C: Volume to capacity ratio; a measure used to define traffic Level of Service (LOS) on a street or highway.

Vegetation die-offs: The loss of vegetation through mortality.

Water Distribution Alternative I: The distribution alternative according to which water would be distributed to new development on a first-come, first-served basis until water supplies are exhausted. In other words, there would be no allocation formula.

Water Distribution Alternative II: The distribution alternative according to which each jurisdiction would be allocated water according to MPWMD's current distribution formula.

Water Distribution Alternative III: The distribution alternative according to which each jurisdiction would be allocated water according to its percentage share of the total new potential residential, commercial, and industrial growth in the Cal-Am service area.

Water Distribution Alternative IV: The distribution alternative according to which each jurisdiction would be allocated water according to its percentage share of the total new potential residential, commercial, and industrial growth in the Cal-Am service area, except that water for projects approved/completed in 1987 and for vacant lots-of-record would be included in each jurisdiction's base allocation, rather than being counted as future development potential, as would be the case under Distribution Alternative III.

Water Distribution Alternative V: The distribution alternative according to which each jurisdiction would be allocated water according to its percentage share of total buildout potential within the Cal-Am service area.

Water Distribution Alternative VI: The distribution alternative according to which each jurisdiction would be allocated water based on its current level of consumption plus water for vacant lots of record and a limited amount of water for low and moderate income housing and public projects.

Water Supply Option I: The water supply option chosen for analysis in the EIR which corresponds with Cal-Am's current production level (18,400 acre-feet).

Water Supply Option II: The water supply option chosen for analysis in the EIR which corresponds with Cal-Am's current water supply capacity assumption (20,000 acre-feet).

Water Supply Option III: The water supply option chosen for analysis in the EIR which reflects a modified assumption for Cal-Am's water supply capacity (20,500 acre-feet).

Water Supply Option IV: The water supply option chosen for analysis in the EIR which would result in the highest level of Cal-Am water production while maintaining viable Steelhead run in the Carmel River (17,500 acre-feet).

Water Supply Option V: The water supply option chosen for analysis in the EIR which would be the least environmentally damaging of the five supply options (16,700 acre-feet). This level of production would result from a nine-percent conservation reduction from the current (January 1988) Cal-Am production level.

Water table: The surface of the groundwater in an unconfined aquifer.

Water year: The period from October 1st of one calendar year through September 30th of the following calendar year.

Water-dependent recreation: Recreation activity that requires direct contact with water.

Water-enhanced recreation: Recreation activities that do not require direct contact with water, but that area enhanced by its presence.

Well: Any device or method, mechanical or otherwise, for the production of water from groundwater supplies, excluding seepage pits and natural springs.

WDS: Water distribution system. According to the MPWMD's *Rules and Regulations*, a water distribution system is defined as "all works within the District used for the collection, storage, transmission, or distribution of water from the source of supply to the connection of a system providing water service to two or more connections including all water-gathering facilities and water-measuring devices, but excluding the user's piping." This definition excludes private wells which supply water to a single user.

Wetland vegetation: Hydrophytic plants which can survive and grow in water-saturated or inundated conditions.

Wetland: Areas with open water depth less than two meters but which are permanently or seasonally inundated with water and have saturated soils and support hydrophytic plants.

WWC: Water West Corporation.

Yearling-sized steelhead: Steelhead that have spent one complete summer in the stream. At the beginning of their second summer, they usually range from four to eight inches in length.

Zero habitat: Jargon referring to the lack of river habitat suitable to the rearing of juvenile steelhead.

Zonation: The arrangement of areas within a region into strips or blocks distinguishable from each other by differences in vegetation, soils, flooding frequency, etc.