

GLOSSARY OF TERMS

A

abandoned mine any excavation, under the surface of the earth, formerly used to extract metallic ores, coal, or other minerals

abandoned mine lands areas adjacent to or affected by abandoned mines, often containing materials that contaminate the surrounding watershed and its associated ecosystem

acre-foot the amount of water to cover one acre to a depth of one foot, equivalent to 43,560 cubic feet or 325,851 gallons of water

adaptive management a structured, iterative process for decision making about land and resource management in the face of uncertainty, aiming to reduce uncertainty and improve decision making through environmental monitoring and scientific investigation

adit a nearly horizontal passage from the surface into a mine

alkaline referring to water that contains dissolved ions of an alkali metal (lithium, sodium, potassium) that give the water a pH value greater than 7 and where the concentration of hydrogen ions from water is correspondingly low

alluvial fan a fan-shaped accumulation of sediment deposited by water at the mouth of a ravine or at the juncture of a tributary stream with the main stream

amenity a thing or circumstance that makes life easier or more pleasant

anaerobic living, active, occurring, or existing in the absence of molecular oxygen (O₂)

anthropogenic originating as the result of human activities

aquatic vegetation plants that have adapted to living in or on aquatic environments

artesian referring to water held belowground in rock formations that subsequently rises to the surface under pressure

asbestos a naturally occurring magnesium silicate mineral with fibrous crystals that cause risks to human health when the fibers lodge in people's lungs

aspect the geographic direction toward which a slope faces

B

background naturally occurring in the environment, independent of any human cause

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bankfull water volume the amount of water that fills a stream up to the height of its banks, the maximum amount of water before flooding occurs

basalt a dense dark gray, fine-grained igneous rock formed from lava and composed chiefly of feldspar and silica compounds rich in iron and magnesium, forming rounded pillow-like rocks as lava cools on the ocean floor

bedrock unweathered rock lying beneath surface soil

bench a level shelf of land with steep slopes above and below it, a terrace

benchmark a standard by which something can be measured or judged

beneficial use one of 20 uses of water that comprise the basis for establishing water quality objectives in California

benthic relating to the bed (e.g., streambed) of a body of water

benthos the assemblage of organisms living at the bottom of a body of water

biological diversity (biodiversity) the variety and variability among living organisms and the ecosystems where they occur

biological integrity the joint capacity of all species at a site, both above and below ground or in water, to support ecological processes within the normal range of variability expected for the site, to resist damages to this capacity, and to recover the capacity when damages to ecological processes occur

biomass the weight of living or dead biological organisms in a given area or ecosystem at a given time

breccia a rock composed of smaller angular rock and mineral fragments held within a matrix of clay and sand that cement the mixture together

brome a grass species in the genus *Bromus*, several of which are major weed species

brownfield abandoned or underused industrial or commercial land that is available for another land use

browse parts of shrubs and trees eaten by animals

C

CALFED Bay-Delta Program a cooperative effort of more than 20 State of California and federal agencies to improve the quality and reliability of California's water supplies and restore the San Francisco Bay-Delta ecosystem

carbon emissions gases and particulate matter containing carbon that originate from both natural (e.g., wildfires) and man-made (e.g., automobiles) sources and are released to the atmosphere

carbon sequestration the process of collecting and storing carbon dioxide or other forms of carbon for the long term to offset adverse effects from global warming

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carbonate an ion consisting of carbon and oxygen, with the chemical formula CO_3^{2-} , that combines with calcium to form limestone

carnivore a flesh-eating animal

chalcedony a form of quartz that is nearly transparent or has a milky appearance

chamise a shrub in the rose family that is a major component of chaparral vegetation in California (scientific name: *Adenostoma fasciculatum*)

channel incision a cut into a stream bank caused from water eroding exposed soil

chaparral shrubland vegetation with thick stiff leaves and branches, found in southwestern Oregon, California, and Baja California where the climate has mild wet winters and dry hot summers

chemical element one of the more than 100 known substances that cannot be separated into simpler substances and that singly or in combination constitute all matter

chert a fine-grained, dense sedimentary rock with very small crystals formed in ancient ocean sediments

climate change statistically significant change in measurements of either the mean state or variability of the temperature, precipitation, wind, etc., for a particular place, region, or planet

cold spring a source of water from inside the earth that is not heated by the earth's core

confluence the place where two rivers merge and flow together

connate water seawater trapped in sedimentary rocks as they formed under pressure from sediments deposited on the ocean floor

conservation easement a legal agreement between a landowner and a conservation organization or a government agency that limits permanently or for a specified time the land uses on a property so that the values of the property for wildlife habitat, biological diversity, watershed protection, etc., are sustained

consumptive resource a natural resource that people physically alter to meet their needs; the resource may be renewable (food) or non-renewable (petroleum), depending on whether the total supply of the resource can increase sustainably

contaminant a substance not naturally present in the environment or present in unnatural concentrations that can, in sufficient concentration, adversely alter an environment and cause harm to organisms, including people

creek mile the length in miles that a creek runs, taking into account the turns and curves in the streambed

criteria pollutant one of a group of air and water contaminants regulated by the US EPA under the Clean Air Act and the Clean Water Act on account of scientific information about adverse impacts from the contaminant on human health and the natural environment

crosswalk a table that combines two datasets to develop more information

crust the solid outer layer of the earth

cultural heritage the legacy of physical artifacts and intangible attributes of a group or society that are inherited from past generations, maintained in the present, and bestowed for the benefit of future generations

D

debris dam a barrier caused by a landslide after an earthquake; floating woody debris and rock material that accumulates across a river channel

debris flow a landslide of unconsolidated, water-saturated debris, often appearing like flowing concrete and including boulders and occasionally a large amount of logs or tree stumps

defoliator an insect or other organism that strips the leaves from plants

deformation (rock) a change in the shape or size of an object due to an applied force from tension, compression, shear, or twisting

delineation the process of determining the outline of a natural feature such as a rock formation, body of water, or habitat of a species of interest

dendritic characterized by having a branched structure, treelike

detritivore an organism that feeds on and breaks down dead plant or animal matter, thereby returning essential nutrients to the food cycle of an ecosystem

devegetated characterized by the absence of plants

drought a lack of water, particularly in the soil when the rate of evapotranspiration from plants and the soil exceeds the replenishment of water from rainfall, groundwater or irrigation

E

ecosystem a recognizable, relatively homogeneous unit of the earth that includes organisms, their environment, and all the interactions among organisms and between organisms and their environment

ecosystem service a natural process in the environment that enhances human life and maintains the quality and quantity of goods and services produced by land uses

El Niño a warm ocean current that flows along the equator from the International Date Line to the coast of Ecuador at Christmas time, leading to heavier than normal rainfall in California during the winter

endemic being unique to a particular geographic location or habitat, being found nowhere else

equestrian related to riding on horseback

eradication elimination, complete destruction

erosion removal of soil, sediment, or rock by wearing down or grinding through the force of wind or water

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evapotranspiration the sum of the movement of water to the atmosphere from the soil, wet surfaces on vegetation, and bodies of water (evaporation) AND the loss of water as vapor by plants through small openings (stomata) in their leaves

F

fecal coliform bacteria bacteria present in the digestive tract of mammals and birds that are transmitted to water through defecation – these bacteria serve as indicators of the presence of harmful disease-causing bacteria

fire line a gap in vegetation with exposed soil or rock that acts as a barrier to halt or slow the progress of a wildfire

fissure a long narrow opening or depression in a surface, a crevice

flood plain capacity the ability of a flood plain to slow the force of water during high flows and reduce rate of soil erosion and volume of sediment transported off site

fluvial relating to or happening in a river, referring especially to the processes of the erosion, transport, and sediment deposition and to the resulting land forms created by these processes

foothill a larger hill at the base of a mountain range

forb a non-woody flowering plant that is not a grass species

friable crumbly, easily broken into small fragments or reduced to powder

fugitive dust small particles of soil suspended in the air by wind action or human activities (farming operations, motor vehicles, etc.)

G

genetic stock a variety of a species possessing a specific set of genes that provide the organisms of that variety with identifiable traits

geochemistry the science of chemistry applied to rocks and minerals

geohazard features in the rocks and geological faults of a region that have the potential to create to uncontrollable risk and damage, for example an earthquake or landslide

geologic water water formed from chemical reactions in rocks and subsequently embedded in rocks for thousands or even millions of years

geologic fault a crack in the earth's crust resulting from the displacement of one side with respect to the other, often resulting in sudden movements of great force such as earthquakes

geomorphology the branch of geology that studies the characteristics, shapes, and evolution of rocks and land forms

geothermal of or relating to the heat in the interior of the earth

geothermometer a thermometer designed to measure temperatures in deep-sea deposits or in bore holes deep below the surface of the earth

geyser a hot spring characterized by intermittent discharge of water ejected turbulently and accompanied by steam

greenhouse gas a gas in the atmosphere that absorbs and emits radiation within the thermal infrared range, contributing to global warming because it reduces the loss of heat into space

ground water water that collects or flows belowground, filling porous spaces in soil, sediment, and rocks, often supplying aquifers, springs, and wells

groundwater recharge the downward and sideway flow of surface water that increases the amount of water stored underground

gully a narrow channel cut by water running down a slope

H

habitat the specific area or environment in which a particular type of species lives and which provides all the basic requirements for survival of that species

habitat fragmentation the breakup of natural environments into smaller, often more isolated sections

haploxert a soil generally with >30% clay content in the fine-grained fraction of a soil to a depth of >50 cm, or < 50 cm if the bedrock is closer than 50 cm to the soil surface, with seasonally wet soils, and with cracks developing in the soil surface > 5 mm wide and >25 cm deep for >60 days during the three months after the summer solstice

hazardous waste (HAZMAT) material that poses a threat to public health or the natural environment

headcut a knick point in a streambed where a steep drop in bed elevation causes water to build up force and erode soil above the nick point, gradually resulting in a lower channel and a lowered water table

heavy metal one of a group of chemical elements, including mercury and arsenic, that can produce toxic effects on organisms

herbaceous referring to a plant that is not woody, i.e., lacking lignin

herbicide a chemical that kills plants or inhibits their growth and reproduction

hierarchical characterized by multiple levels or layers in a specific order

hydric soil a soil that formed under conditions of saturation, flooding or ponding, often poorly drained and having a water table at ground level during the growing season

hydrocarbon an organic compound (e.g., methane) that contains only carbon and hydrogen, often used as a source of energy

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hydrography the science of measuring, describing, and mapping surface waters

hydrologic basin a landscape area characterized by all runoff being conveyed to the same outlet

hydrologic function the capacity of a watershed to capture, store, and safely release water from rainfall and to resist and recover from disturbances that diminish this capacity

hydrologic unit a geographic area representing part or all of a surface drainage basin as delineated on State Hydrologic Unit Maps; each hydrologic unit is identified by an eight-digit number

hydrology the branch of geology that studies water on the earth and in the atmosphere, including its distribution, uses, and conservation

hydrothermal relating to hot water, particularly coming from below the earth's crust

hydrothermal alteration a chemical change in rocks and minerals caused by super-heated water dissolving metals in rocks and creating fluids that transport and precipitate metals into mineral deposits at concentrations that are often important for commercial extraction

hypothesis an unverified proposal that intends to explain certain facts or observations

I

igneous produced under conditions involving intense heat such as fire or cooling magma

impaired water a water body that does not meet water quality standards established by the federal government or the State of California because of the presence of contaminants

impermeable preventing to pass or diffuse through

infrastructure the basic physical elements of human-made services, including roads, energy utilities, water, sewage, and telecommunications, considered essential for human productivity and well-being

intermittent stream a watercourse that flows in a well-defined channel only in direct response to a precipitation event or seasonal flow from a spring

inversion an abnormal condition occurring when air temperature increases with height, often leading to air pollution when pollutant chemicals build up their concentrations in the colder air close to the ground and cannot disperse

invertebrate an animal lacking a spine or an internal skeleton

ion a particle of one or more atoms that has an electrical charge (positive or negative) because one or more of the atoms have lost (positive charge) or gained (negative charge) one or more electrons

J

K

L

langley a unit of solar radiation equal to one gram-calorie per square centimeter. A gram-calorie is the amount of heat required to raise the temperature of one gram of water one degree Celsius.

lithic consisting of or relating to stone or rock

longitudinal section a diagram of the lengthwise shape of a stream

M

mafic referring to a silicate mineral or rock that has high content of magnesium and iron, e.g. basalt

magma molten rock in the mantle below the earth's crust

mass wasting a geomorphic process of rock or soil sliding downslope under the force of gravity

material culture the collection of physical objects or artifacts used by a society

maximum contaminant load the largest concentration permitted in the State of California for a pollutant in water

mechanized trail a recreation pathway that permits foot traffic and vehicles that travel only under the power of the vehicle rider (e.g., a mountain bike)

Mediterranean climate a climate characterized by moist, mild winters and hot, dry summers

mélange a large-scale mass of rocks characterized by discontinuous layers and rock fragments of all sizes appearing as a complex jumble

metamorphosed changed in form or nature, referring to rock that pressure and heat have altered

metasedimentary referring to rock created from ocean sediments that transformed physically or chemically under pressure or heat

metavolcanic referring to rock created from magma that pressure or heat later transformed physically or chemically

meteoric water water on the surface, in the ground, and in the atmosphere that originates from rainfall

methylation the chemical process of attaching or substituting a methyl group (-CH₃) in a molecule, e.g., when an atom of mercury bonds chemically to a methyl group

methylmercury an ion containing carbon in a methyl group plus mercury (CH₃Hg⁺) that is readily absorbed into organisms and is highly toxic

metropolitan statistical area a geographic area with a significant core urban population, along with other smaller adjacent communities that are economically and socially integrated with the core population

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microclimate localized climate conditions, e.g., in a valley or under a forest canopy

micropolitan statistical area an area with an urban core that contains between 10,000 and 49,999 residents

mine complex a group of mines located close together and treated as a single unit when remediation for abandoned mines is planned or underway

mine waste the rock removed to get to the valued ore deposits at a mine site

molar referring the percent of molecules or atoms of a particular gas in a volume containing different gases

mollusk an invertebrate having a soft unsegmented body, often enclosed by a shell

motorized trail a recreation pathway that permits foot traffic, vehicles that travel only under the power of the vehicle rider (e.g., a mountain bike), and vehicles powered by motors (e.g., a 4-wheel drive automobile)

N

natural disturbance a naturally occurring event that alters ecosystem processes temporarily or permanently (e.g., flood, hurricane, earthquake, fire)

neotropical referring to tropical areas in the Americas

nephelometric turbidity a quantitative measure of suspended sediment and dissolved particles in water using the extent to which light passing through the water is deflected (or “scattered”)

non-consumptive resource a natural resource that people do not alter in their response to or interaction with it, e.g., a recreation experience or a landscape vista

non-governmental organization a legally chartered non-profit group created by people or corporations and not associated with any government

non-renewable energy energy from a finite source that cannot be replenished

O

ophiolite a sequence of igneous rocks in the earth’s crust or upper mantle, characterized by ultramafic rocks at the base and, in ascending order, gabbro, basalt, and an overlay of deep-sea sediments

organic matter residues of dead organisms in a state of decomposition

overland flow the movement of water downslope across a land surface, also known as surface runoff

overthrust a rock layer pushed up by pressure until one side of the layer folds over onto the other side, resulting in younger rock layers being situated above older rock layers

ozone a colorless gas consisting of three oxygen atoms, occurring as a pollutant at ground level but acting as a shield against solar energy in the upper atmosphere

P

parent rock the mineral material from which a soil has formed

particulate matter tiny amounts of solids or liquids suspended in a solid, liquid, or gas

pathogen any organism, such as a bacterium or virus, that causes disease

percolate to leach, spread gradually

peridotite an ultramafic rock composed principally of the iron-magnesium silicate olivine and with a silica content of less than 40 percent

petrofacies one or more attributes of a rock type based on its composition and structure

pH a measure of the acidity of a solution given as the logarithm of the reciprocal of the hydrogen-ion concentration in a solution

photosynthesis the process by which plants and other organisms produce carbohydrates and oxygen from carbon dioxide, water, and light energy in their cells

plagioclase a feldspar mineral consisting of silicon, aluminum, calcium, and sodium and originating in magma

plant alliance vegetation with one or more diagnostic dominant species found on sites with similar climate, soils, moisture, and disturbance regimes

ponding standing water in closed depressions on the ground surface where percolation into the soil is the only source for outflow

potentially responsible party a possible polluter who may eventually be liable for the costs of response actions to clean up a contaminated site

public trust the responsibility that the public places with government to care for its interests; the responsibility of the government to preserve resources for public use

Q

R

raptor a bird of prey; a bird that hunts and kills other animals

recruitment the process of propagating new plants naturally at a site

redox potential a measure in volts of the ability of a chemical to acquire electrons, a higher value indicating a greater affinity for electrons

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regeneration the process of reestablishing vegetation at a site after a disturbance on site

regulatory agency a public authority responsible for overseeing the status of a natural resource and empowered with the ability to permit or deny an action that affects the natural resource

remediation the process of cleaning up toxic or hazardous materials from disturbed sites such as abandoned mines

renewable energy energy generated from natural resources such as sunlight, wind, tides, and geothermal heat that are capable of replenishing themselves naturally

resilience the ability of an ecosystem to function intact despite disturbances AND to return to its previous condition after excessive disturbances alters the structure and function of the ecosystem

restoration the process of recovering ecological processes and species components to a site after a disturbance

retort a closed chamber or vessel with an outlet tube

retort furnace a vertical furnace fitted with a cylindrical metal retort into which cinnabar ore is placed and heated to extract mercury from cinnabar decomposition

riparian of or referring to the bank of a stream or river

rodenticide chemicals intended to kill rodent pests

runoff the part of precipitation that travels overland to reach surface streams or other water bodies

S

saline having a high content of salts

salt an ionic compound produced from the reaction of an acid with a base, the most common being sodium chloride or table salt

savanna a grassland characterized by widely spaced trees and a discontinuous tree canopy cover

sediment particulate matter that is transported by a fluid, wind, or ice and eventually deposited

sedimentary referring to rocks formed by the deposition and subsequent compression of small mineral particles

seep a fracture in rock through which a liquid such as groundwater or petroleum discharges intermittently

serpentinite rock containing ultramafic minerals transformed by the addition of water and the application of pressure or heat

sinuosity a measure of the deviation of a stream course from the shortest possible distance between two points in the stream course; a bending or curving shape to a stream

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slate a fine-grained rock formed from the metamorphosis of clay or shale that splits into thin, smooth-surfaced layers

soil moisture deficit the difference in moisture between the maximum amount of water that a soil can hold and the amount of moisture in the soil at a given time, specifically in the rooting zone of plants

soil series the basic unit of soil classification used by the USDA National Cooperative Soil Survey consisting of soils originating from similar parent rock and sharing chemical and physical properties

soil stability the capacity of a site to limit redistribution and loss of soil and its resources such as mineral nutrients and organic matter due to erosion by wind or water

solar radiation the total spectrum of electromagnetic energy (including sunlight) given off by the sun

solute a chemical substance uniformly mixed into another chemical substance and usually splitting apart to form ions

stagnation lack of movement in air layers so that pollutants from fires, industrial emissions, or motor vehicles accumulate

stakeholder an individual or group with an interest in delivering solutions to issues and sustaining the ecological services and economic production of a watershed for common goals

stewardship the careful and responsible management of something entrusted to one's care

stomata pores on the surface of leaves that allows for the exchanges of gases, including water vapor, between plants and the atmosphere; a single pore is called a stoma

stream channel a streambed and its banks

stream morphology the pattern and shapes of a stream channel and the changes to the channel over time as affected by sediment erosion, transport, and deposition

stewardship the careful and responsible management of something entrusted to one's care

strike-slip fault one rock formation slips past one another

subduct to move under another plate in the earth's crust, often down into the earth's mantle to become molten

subsistence hunting or gathering of wild foods or other natural resources for personal or family use

substrate a surface on which an organism grows or is attached

subwatershed a division of a watershed that defines the drainage area of a tributary to the main stream of the watershed

swale a natural or man-made low-lying area that holds water during and after storms and permits the water to infiltrate the soil

T

tailings crushed rock left from processing ore deposits at a mine site

talus a mass of loose rocks at the base of a steep slope or cliff

tectonic plate a part of the earth's crust that shifts against or away from another plate and at whose boundaries earthquakes, volcanic eruptions, trench formation, and mountain building occur

tectonics movement and deformation of the earth's crust

terracette a small step-like terrain feature developed on the surface of a slumped soil mass along a steep, often grassy, hillside

thermal spring see hot spring

thrust fault one rock layer pushes up and over another layer in a different rock formation

topography the configuration of the earth's surface features

total daily maximum load a calculation of the maximum amount of a pollutant that a stream or other water body can receive and still safely meet the water quality standards established by a governmental water management agency

total mercury the sum of molecular mercury, mercury in chemical compounds, and mercury in ionic forms found in a defined volume of soil, water, or air

transpire to exude water vapor through plant stomata

tributary a stream that flows into a larger stream

trophic pertaining to nutrition for a species; describing the relationships among organisms in a food web

tuff rock composed of compacted volcanic ash

U

ultramafic referring to igneous rocks and derived soils with a very low silica content (<45 percent) and a high iron and magnesium ("mafic") content

ultramafic barren an ultramafic rock outcrop with limited soil formation, low fertility, and scant vegetation; also known as serpentine barren

upland land at a higher elevation outside a flood plain

V

vegetation alliance see plant alliance

BEAR CREEK WATERSHED ASSESSMENT

vertebrate an animal that has a backbone or spinal column

volatile organic compound a chemical compound that contains carbon and vaporizes at ambient temperature

volcanic field a region of the earth's crust characterized by numerous active volcanoes

volcanic rock igneous rock form from cooling lava on or near the earth's surface

W

water quality the physical, chemical, and biological features of a water body

water table depth in the soil below which the ground is saturated with water

watershed an area, usually bounded on its sides by a natural divide such as a hill, ridge, or mountain, from which water drains ultimately to a single channel or river

weathered altered in color, texture, chemical composition, or form from exposure to the weather, usually over a long time

wetland habitat where the presence of surface water or groundwater has resulted in the development of plant or animal communities adapted to aquatic or intermittently wet conditions

X

Y

Z