

Glossary of Terms

Aquifer

a geological formation of permeable rock, sand, or other material that holds and allows the flow of water.

Confined aquifer

an aquifer located between layers of relatively impermeable material (such as clay or shale) and is under pressure.

Unconfined aquifer

An aquifer with an upper surface (water table) open to the atmosphere through permeable material. The water table in an unconfined aquifer rises and falls depending on the amount of water entering or leaving the aquifer.

Aquifer storage and recovery (ASR)

a water management strategy that involves injecting surface water into underground aquifers during periods of surplus, to be recovered and used during periods of scarcity.

Aquitard

a geological formation that has low permeability and does not easily transmit water.

Basin (Surface Water Basin)

a geographical area where all the water that falls as precipitation drains to a common outlet such as a river, lake, or ocean. A basin is the area where all rainwater drains to a single point; it represents the spatial delimitation of the water cycle in the landscape. Rivers in a basin flow into major river systems, a lake, or the ocean. The terms watershed and basin are sometimes used interchangeably when referring to the drainage area of a point along a waterway. The correct term used in hydrology to refer to the drainage area is watershed; however, the term basin is used more frequently, and in this course, we will use both terms as synonyms. A basin includes all surface water (e.g., rivers, lakes, wetlands) and groundwater (aquifers) resources. Imagine it as the area of influence of precipitation, meaning that when it rains, all the water is collected and exits through a single point.

Basin (Groundwater Basin)

a distinct area composed of permeable materials and bounded by geological barriers, capable of storing and transmitting significant quantities of groundwater.

Brackish Groundwater (High Salinity Content)

groundwater that contains higher salinity levels than native water but is less saline than seawater, often considered for desalination as a water supply source.

Domestic Water User (Groundwater)

a groundwater user who extracts, for domestic purposes, two acre-feet or less per year.

Evapotranspiration

a process by which water is transferred from the land to the atmosphere by evaporation from the soil and other surfaces and by transpiration from plants.

Surface Water

water that accumulates on the Earth's surface, such as in streams, rivers, lakes, wetlands, or reservoirs.

Groundwater

Water that resides beneath the Earth's surface in the cracks of rocks and in the pores of geological materials.

Groundwater Recharge

A process by which surface water seeps through the soil and rock layers, replenishing aquifers. Rain, snow, and surface water bodies are the main natural sources of recharge. Artificial or managed recharge methods include spreading basins, recharge wells, and wetland restoration.

Injection Well (Groundwater)

A type of well used to inject water into underground formations to promote groundwater recharge.

Monitoring Well

A type of well used to monitor various characteristics of groundwater, such as its level, quality, and movement.

Groundwater Overdraft

A situation in which groundwater is extracted at a faster rate than it is replenished or recharged.

Private Pumpers

An individual or entity that owns and operates private wells to extract groundwater, usually for their own use.

Seawater Intrusion (Saltwater Intrusion)

The process by which seawater flows into freshwater aquifers, typically occurring in coastal areas. Seawater intrusion can significantly impact freshwater resources, making them saline and unsuitable for most uses without costly treatment. [Learn more.](#)

Seawater Extraction Barrier

A method or structure designed to prevent the movement of seawater into freshwater aquifers, which involves extracting brackish seawater to create a barrier.

Groundwater Subbasin

A smaller division within a groundwater basin that may have slightly different hydrological characteristics than the surrounding areas.

Groundwater level (Water Table)

The upper surface of the groundwater, where the soil or rocks are permanently saturated with water.

Land Subsidence

Land subsidence occurs when large amounts of groundwater are extracted from certain types of rocks, such as fine-grained sediments. The rock compacts because the water helps maintain the soil's stability. When the water is removed, the rocks collapse upon themselves. Land subsidence may not be very noticeable, as it can occur over large areas rather than at a single point, as in the case of a sinkhole.

Demand Management

a strategy aimed at planning and managing water demand to achieve a balanced water budget and sustainable water use.

Groundwater Sustainability Agency (GSA)

a public agency formed to manage groundwater resources in a specific area, particularly in the context of the Sustainable Groundwater Management Act (SGMA).

Groundwater Sustainability Water Rate

a fee imposed by a GSA (such as the Salinas Valley Basin Groundwater Sustainability Agency) to fund the costs associated with developing and implementing a Groundwater Sustainability Plan (GSP) and complying with the Sustainable Groundwater Management Act (SGMA).

Groundwater Sustainability Plan (GSP)

a comprehensive planning document developed by a Groundwater Sustainability Agency to manage and utilize groundwater resources sustainably.

In-Lieu Use of Water Source - Changed

a water management strategy in which an alternative water source is used as a substitute for the typical source, with the goal of conserving the latter.

Measurable Objective (MO)

A specific quantitative target established by a Groundwater Sustainability Agency for various sustainability indicators of a basin. It represents the ideal groundwater conditions in the basin and allows the GSA to achieve its sustainability goals.

Minimum Threshold (MT)

A specific quantitative limit established by a Groundwater Sustainability Agency for various sustainability indicators of a basin. It represents the groundwater conditions at a representative monitoring site that, if exceeded individually or in combination with the minimum thresholds of other representative monitoring sites, could cause undesirable results in the basin.

Multiple Benefit Land Repurposing (MLRP)

A process of converting agricultural land to uses that provide multiple benefits, such as improving groundwater recharge, enhancing habitat, and reducing water demand.

Projects and Management Actions (PMAs)

Initiatives and strategies outlined in a Groundwater Sustainability Plan designed to achieve and maintain sustainable groundwater management.

Representative Monitoring Site (RMS)

A specific location within a groundwater basin selected to monitor conditions and assess progress toward sustainability goals.

Sustainability Goal

A required component of the Sustainable Management Criteria that Groundwater Sustainability Agencies (GSAs) must develop for the entire basin. The sustainability goal must concisely state the GSA's objectives and desired conditions for the basin, how it will achieve those conditions, and why the planned actions will lead to success.

Sustainable Groundwater Management Act (SGMA)

A legislative framework enacted by the State of California in 2014 to regulate groundwater use and promote sustainable management of groundwater resources.

Sustainability Indicator (SI)

A specific condition used to assess the health of a groundwater basin under the Sustainable Groundwater Management Act (SGMA). The six sustainability indicators are:

- Chronic lowering of groundwater levels
- Reduction of groundwater storage
- Seawater intrusion
- Degraded water quality
- Land subsidence
- Depletion of interconnected surface water.

Department of Water Resources (DWR)

The state agency that manages California's water resources and oversees the implementation of the Sustainable Groundwater Management Act (SGMA).

Sustainable Management Criteria (SMC)

A critical factor that Groundwater Sustainability Agencies must address in their Groundwater Sustainability Plans. Sustainable Management Criteria include:

- Sustainability Goals
- Undesirable Results (UR)
- Minimum Thresholds (MT)
- Measurable Objectives (MO)

Undesirable Result

An adverse outcome that the Sustainable Groundwater Management Act (SGMA) aims to prevent through the monitoring and management of the six sustainability indicators.

Water Year

A term commonly used in hydrology and water resources management to describe a specific 12-month period. In California, the water year begins on October 1 and ends on September 30.

Water Use

A term commonly used in hydrology and water resources management to refer to the various forms of water consumption or ways in which human beings use water, including domestic, agricultural, industrial and recreational purposes.