**Karsts**

**Karsts** is a [topography](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Topography) formed from the dissolution of soluble rocks such as [limestone](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Limestone), [dolomite](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Dolomite_%28rock%29), and [gypsum](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Gypsum). It is characterized by underground drainage systems with [sinkholes](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Sinkhole) and [caves](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Cave). It has also been documented for more [weathering](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Weathering)-resistant rocks, such as [quartzite](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Quartzite), given the right conditions. Subterranean drainage may limit surface water, with few to no rivers or lakes. However, in regions where the dissolved bedrock is covered (perhaps by debris) or confined by one or more superimposed non-soluble rock strata, distinctive karst features may occur only at subsurface levels and can be totally missing above ground.



Karst is most strongly developed in dense [carbonate rock](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Carbonate_rock), such as limestone, that is thinly [bedded](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Bed_%28geology%29) and highly [fractured](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Joint_%28geology%29). Karst is not typically well developed in [chalk](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Chalk), because chalk is highly porous rather than dense, so the flow of groundwater is not concentrated along fractures. Karst is also most strongly developed where the water table is relatively low, such as in uplands with [entrenched valleys](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Entrenched_river), and where rainfall is moderate to heavy. This contributes to rapid downward movement of groundwater, which promotes dissolution of the bedrock, whereas standing groundwater becomes saturated with carbonate minerals and ceases to dissolve the bedrock,

**Chemistry of dissolution**:

The [carbonic acid](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Carbonic_acid) that causes karstic features is formed as rain passes through [Earth's atmosphere](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Earth%27s_atmosphere) picking up [carbon dioxide](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Carbon_dioxide) (CO2), which readily dissolves in the water. Once the rain reaches the ground, it may pass through [soil](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Soil) that provides additional CO2 produced by [soil respiration](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Soil_respiration). Some of the dissolved carbon dioxide reacts with the water to form a weak carbonic acid solution, which dissolves [calcium carbonate](https://rnbpnmuajpatmskzedad4v3sjq-jj2cvlaia66be-en-m-wikipedia-org.translate.goog/wiki/Calcium_carbonate). The primary reaction sequence in limestone dissolution is the following:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| H 2 O | + | CO2 | → | H 2 CO 3 |
| CaCO3 | + | H 2 CO 3 | → | Ca2+ | + | 2 HCO-3 |