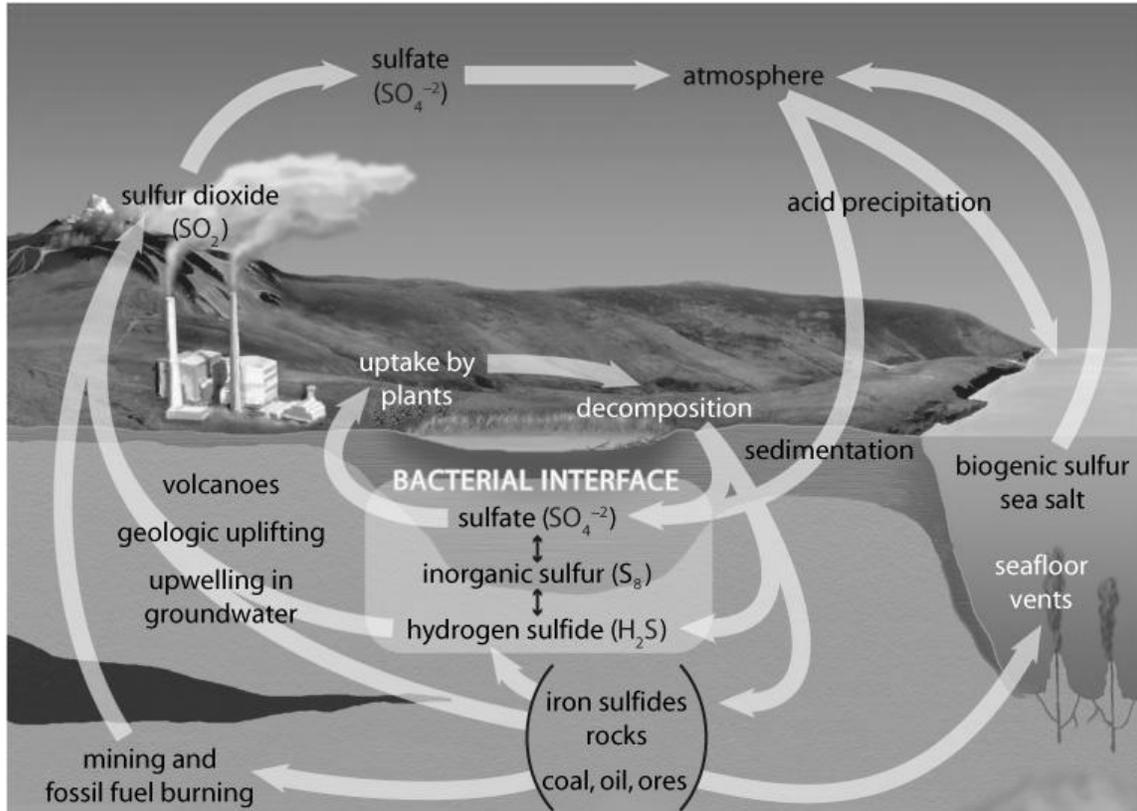


The sulfur cycle is a biogeochemical cycle that shows how sulfur is converted into different forms as it is transported through the air, water, and soil. All organisms require sulfur as an important component of proteins and vitamins.



## Sulfur in the Air

- The decomposition of organic matter, volcanic off-gassing, and human activities all release sulfur into the atmosphere.
- Rain and snow soon return sulfur to Earth's surface via acid deposition.

## Sulfur in the Water

- Plants and algae take up sulfur in the water-soluble form of sulfate ( $\text{SO}_4^{2-}$ ).

## Sulfur in the Soil

- Decomposers quickly return sulfur to the soil or air as hydrogen sulfide ( $\text{H}_2\text{S}$ ).
- Soil bacteria use sulfur compounds in photosynthesis or cellular respiration, thus playing an essential role as they convert one form of sulfur to another.
- Some sulfur is taken out of rapid cycling when bacteria convert sulfur to forms that are layered down as sediments, eventually becoming part of rocks.