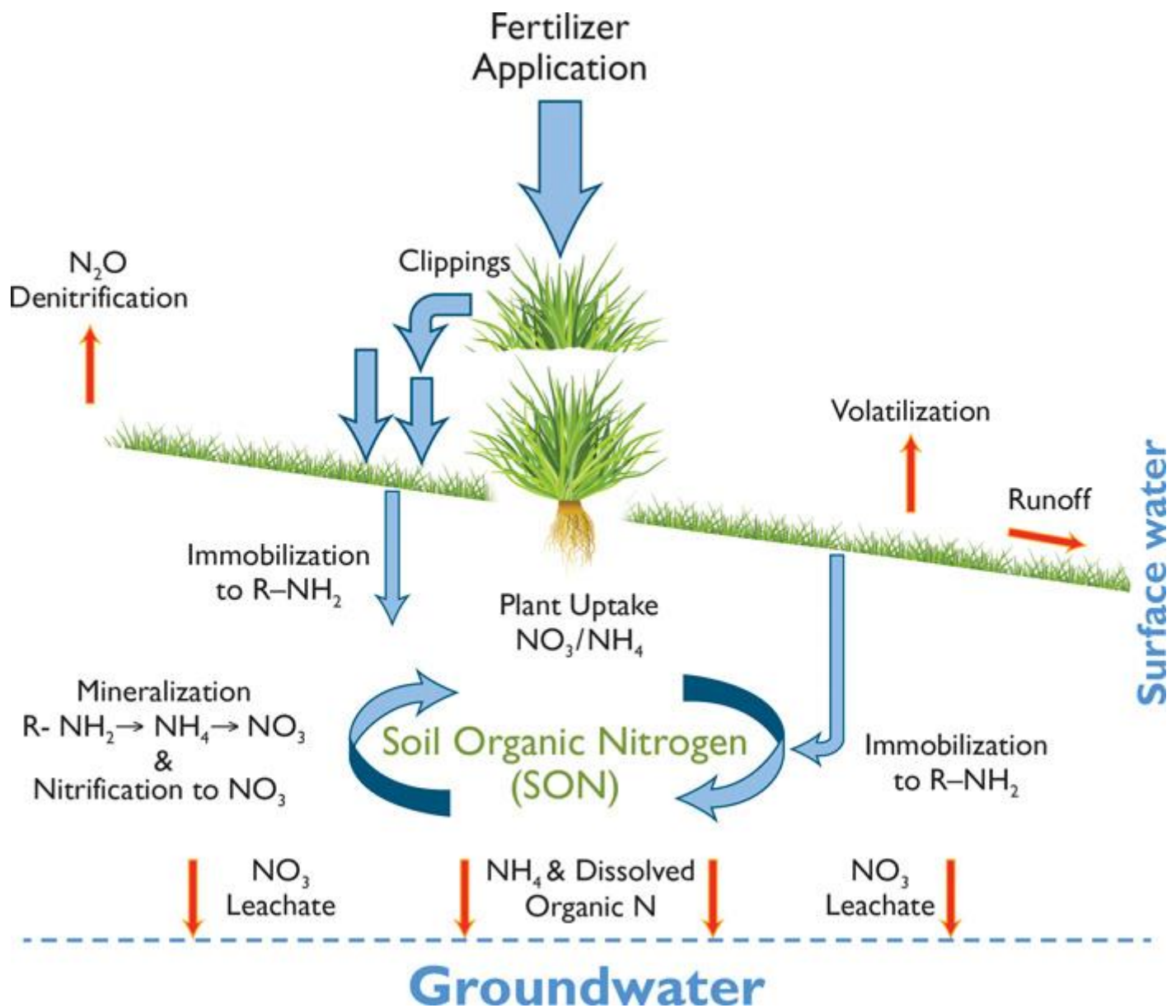


## Nitrogen

Nitrogen (N) is the most important managed nutrient for both plant growth and health. Insufficient N limits growth and plants' ability to withstand stress. For example, sufficient nitrogen is required for root growth; insufficient amounts may result in a weaker root system and lower reserves. Conversely, excessive N can lead to excessive shoot growth at the expense of root growth and result in a weaker plant structure. Providing sufficient quantities of nitrogen, consistently over time, maintains turf density, quality, and function.

The source, rate, and timing of nitrogen fertilization influence the turfgrass response. For example, soluble N sources provide quick green up but often do not sustain this response for more than a few weeks (depending on rate). These factors also have a significant influence on the fate of nitrogen applied into the environment.



Nitrogen cycle.