



EDWARDS AQUIFER AUTHORITY

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Drainage basins in the contributing zone collect surface water runoff and funnel it into streams that cross the recharge zone.



In the artesian zone, the water flows generally from west to east.

- Contributing Zone
- Recharge Zone
- Artesian Zone
- County Lines
- EAA Jurisdictional Boundary
- San Antonio City Limits
- Major Rivers
- Minor Rivers
- Intermittent Streams

Water movement through the Edwards Limestone is generally slower south and east of the fresh water zone. This water remains in contact with the limestone and gypsum longer, allowing dissolved mineral concentrations to increase to over 1,000 milligrams/liter.



How Does The Aquifer Work?

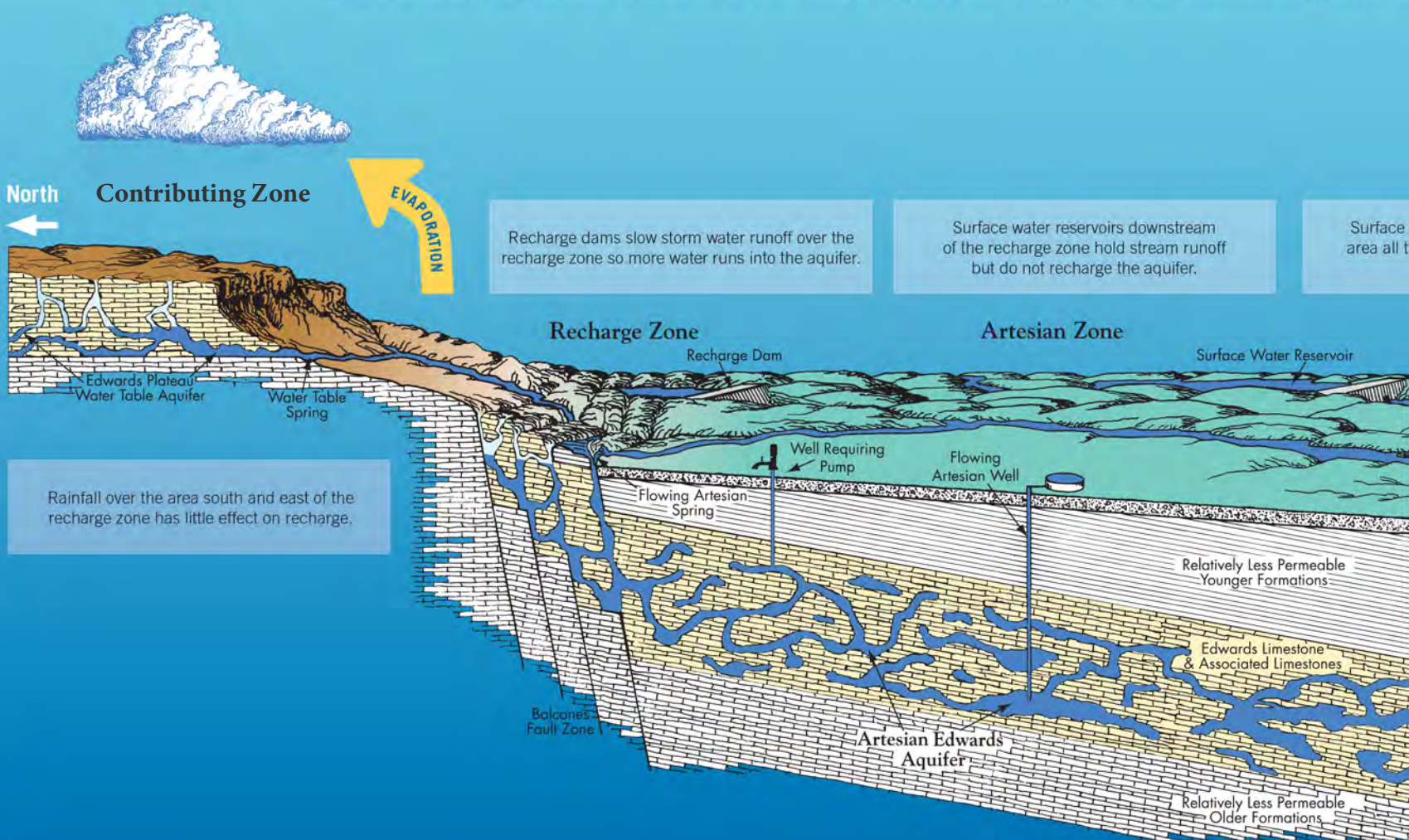
About 85% of precipitation falling on the area is lost back to the atmosphere by evaporation or by transpiration of water vapor from vegetation.

This generalized diagram of a north-south cross section of the Edwards Aquifer region highlights the key components of the aquifer and how they inter-relate and function to form a natural underground system for storing water.

The Edwards Aquifer is a karst aquifer, which means it consists of porous, honeycombed formations of Edwards Limestone and other associated limestones that serve as natural conduits through which water travels and is stored under ground.

Water reaches the aquifer as rain runoff that first collects on the *contributing zone* (Edwards Plateau), soaks into the water table, and then emerges as spring-fed

streams that flow downhill to the *recharge zone*. In the recharge zone, where the Edwards Limestone is exposed at the land surface, the water actually enters the aquifer through cracks, crevices, caves, and sinkholes, and then percolates further underground into the *artesian zone*. Here, a complex network of interconnected spaces, varying in size from microscopic pores to open caverns, stores and carries water in a west to east direction. Because water in the artesian zone is under pressure, there are areas where water is forced back to the surface through openings such as springs and free-flowing wells. Where there is not enough artesian pressure to force water to the surface, wells equipped with pumps can extract water from the aquifer for human use.



Rainfall over the area south and east of the recharge zone has little effect on recharge.

Recharge dams slow storm water runoff over the recharge zone so more water runs into the aquifer.

Surface water reservoirs downstream of the recharge zone hold stream runoff but do not recharge the aquifer.

Surface streams flow beyond the aquifer area all the way to the bays and estuaries of the Gulf Coast.

Flowing artesian wells and springs exist where hydraulic pressure is sufficient to force the water up through wells and faults to the surface. Pumps are used where there is less hydraulic pressure.

Water in the artesian zone of the porous Edwards Limestone is confined between two relatively less permeable geologic formations.

South