

Inner View of the Edwards Aquifer

SECTION 1 VOCABULARY

Aquifer– Any zone below the surface of the earth which stores, transmits, and yields water in sufficient quantities for human use.

Matrix– The material in which something is embedded. For example, fossils, pebbles, mineral veins or fine grained materials surrounded by larger grains in a rock. The matrix of the Edwards aquifer is limestone.

Pore– The spaces between particles in a rock or sediment occupied by water or air.

Infiltration– The process of water entering the ground through cracks, soil, or porous rock.

Groundwater– Water that is stored under the earth's surface.

Water Table– The top level of the water underground (Top of the Zone of Saturation). This will rise if the aquifer receives rainwater to recharge, and lower if we do not get rainwater to recharge the aquifer. The Water Table will also lower when we pump large amounts of groundwater from the aquifer.

Contaminant– Anything *other* than water that gets into an aquifer. Man-made contaminants include fertilizer, motor oil, diesel, sewage, herbicides, pesticides, solvents, and much more.

SECTION 2 VOCABULARY

Limestone– Sedimentary rocks that are made from the mineral calcite that formed in association with water. Often limestone formed on the beds of ancient oceans as evidenced by fossils of sea creatures found in the rock.

Dissolution– The process of dissolving.

Karst Aquifer– an aquifer found in limestone or other soluble rock that contains features like sinkholes, caves and springs.

Carbonic Acid– (H_2CO_3) a weak acid that forms when carbon dioxide from the air dissolves in rainwater. This dissolves limestone and other carbonate rocks to create underground openings like caves.

Cave– A cavity (opening) in limestone formed by the continual dissolution by acidic rainwater over a long period of time.

Sinkhole– A surface depression formed by the solution of limestone or the collapse over a subterranean void such as a cave.

Karst feature– Sinkholes, fissures, underground streams, or caves formed when limestone is dissolved over time by carbonic acid.

Spring– A place where water flows from rock or soil up on the land or into a body of surface water.

Conduit– Any passage in a karst aquifer that water flows through.

Precipitation– When calcite dissolved in water comes out of solution and forms a solid. This is how the limestone that formed the Edwards Aquifer was made. The same process creates cave formations like stalactites and stalagmites.

Permeability– When liquids like water can move through pores or cracks in a material.

Porosity– Any property of geologic formations which has the ability to hold and yield water due to the spaces between particles.

Recharge– Process by which water is added to an aquifer.

SECTION 3 VOCABULARY

Matrix Flow – Water that flows through the matrix of an aquifer. The opposite of this is conduit flow.

Edwards Limestone– Layers formed in the Cretaceous Period of the Mesozoic Era (100 million years ago) when central Texas was covered by a shallow sea. Formed from the remains of marine organisms, like shells and coral, and calcium carbonate deposited in layers, or strata, on the ancient seafloor,

Conduit Flow – Water that flows through a tube or conduit in a karst aquifer. Conduits can be a few millimeters to tens of meters in diameter.

Recharge Zone – The area on the earth's surface where water may enter into a groundwater aquifer. The Edwards Aquifer lies in a dipping position in the earth's subsurface, and the Edwards Recharge Zone is the area where the Edwards Limestone intersects the earth's surface.

SECTION 4 VOCABULARY

Endangered Species – Species of organism (plant or animal) that has been identified with the potential to go extinct, often because of habitat destruction or change in their environment. They are protected under the Endangered Species Act.

Cave Fauna – Any animal that lives in a cave, including salamanders, insects, and fish.

Cave Adapted Species – Any organism that has evolved to live specifically in caves. Often they exhibit adaptations to living in total darkness like lack of pigment in their skin, elongated limbs, or lack of eyes. They cannot live outside of caves.

Endemic Species – Species of organisms that are found *only* in a certain place on the earth. The Edwards Aquifer has many endemic species.

SECTION 5 VOCABULARY

Pervious Cover – Portions of the surface that allow water to permeate through it. These covers (including gravel, soil and sands) allow water to recharge the Edwards Aquifer. Without pervious cover water, the Edwards Aquifer would not have water in it.

Impervious Cover – Portions of the earth's surface that do *not* allow water to permeate through it. These covers include concrete, buildings, and asphalt. Impervious cover increases surface water runoff and has negative impacts for the Edwards Aquifer.