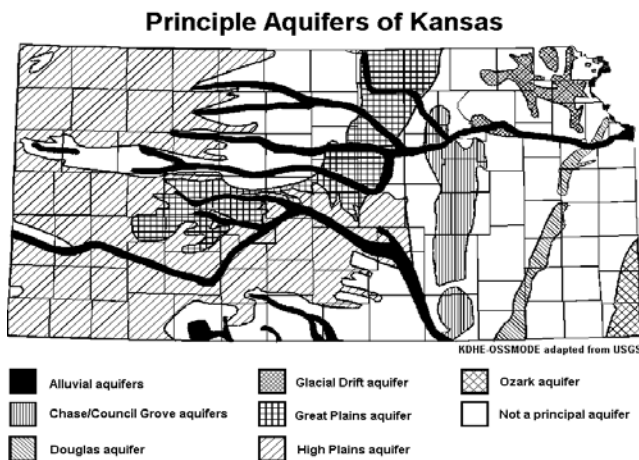


KANSAS GROUND WATER CONDITIONS

Ground Water in Kansas: In Kansas, ground water is an extremely precious natural resource which accounts for about 90% of the total water used in the state. Kansas depends heavily upon ground water for irrigation, drinking water, livestock watering, and industry. Ground water is the principal source for over 600 public water supply systems and most rural-domestic systems in Kansas. Approximately 60% of the State's population consume ground water. However, irrigation is still the number one use for Kansas ground water. Over 90% of all ground water withdrawn in Kansas is used for irrigation.

Kansas Ground Water Resources: Much of Kansas is underlain by porous geological formations containing appreciable quantities of ground water. The largest such formations consist of unconsolidated materials (gravel, sand and silt) deposited by streams. Some unconsolidated glacial deposits and consolidated bedrock formations also contain appreciable quantities of ground water. The total freshwater storage in all major Kansas aquifers is estimated at 590 million acre-feet.

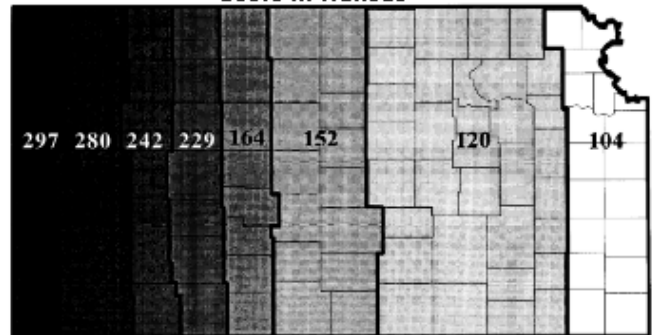
Kansas has a number of principal aquifer systems. The largest of these is the High Plains or Ogallala aquifer. It is estimated this aquifer has about 245 million acre-feet of stored water. Declining ground water levels and contamination are a threat to the aquifers that Kansans rely on.



Factors Affecting Ground Water Declines:

The major cause of Kansas ground water level declines is the combination of intensive ground water pumping for irrigation purposes and several years of below normal precipitation. Below normal precipitation usually results in decreased ground water recharge. More importantly, below normal precipitation generally results in increased ground water pumping. With the boom in irrigation in the 1960's and 1970's, ground-water levels dropped substantially, most dramatically in western Kansas (the Ogallala aquifer is an example). Aquifers are still being depleted and streams are drying up due to ground water pumping. In some areas, decades of irrigation pumping have lowered ground-water levels by

Average Gallons Used Per Capita by Public Water Users in Kansas



over 200 feet.

General Ground Water Quality: Kansas is fortunate to have a relatively abundant supply of water. Ground water quality in most of the state is adequate to maintain present uses although much of the shallow aquifer ground water has been pumped, leaving only the deeper regions of the aquifer available. Deeper aquifers generally are poorer quality in terms of dissolved solids than the shallower regions. In some areas, elevated levels of ammonia, sulfate, sodium, and chloride may also exist due to natural sources. These constituents normally do not cause health-related problems; However, they may create aesthetic problems such as scale deposits, stains, odor, and undesirable taste. Ground water contamination emerges from point and non-point sources.

Protecting Our Ground Water: Declining water levels in aquifers steadily over the past several decades have prompted stringent management practices to avoid future water shortages. A better understanding of the hydrologic process and knowledge of Kansas resources will give incentive to develop more efficient irrigation practices as well as improve personal water usage.

To obtain our ground water protection goal, Kansas implements pollution prevention measures, corrects the existing ground water pollution problems and has close control of limited degradation where it is determined to be economically and socially necessary through numerous state programs-

Source water assessments have been completed for all public water supplies that treat and distribute raw source water (754 total assessments). These include both surface and groundwater systems. Now are focusing on source water protection planning and implementation, on a voluntary basis.