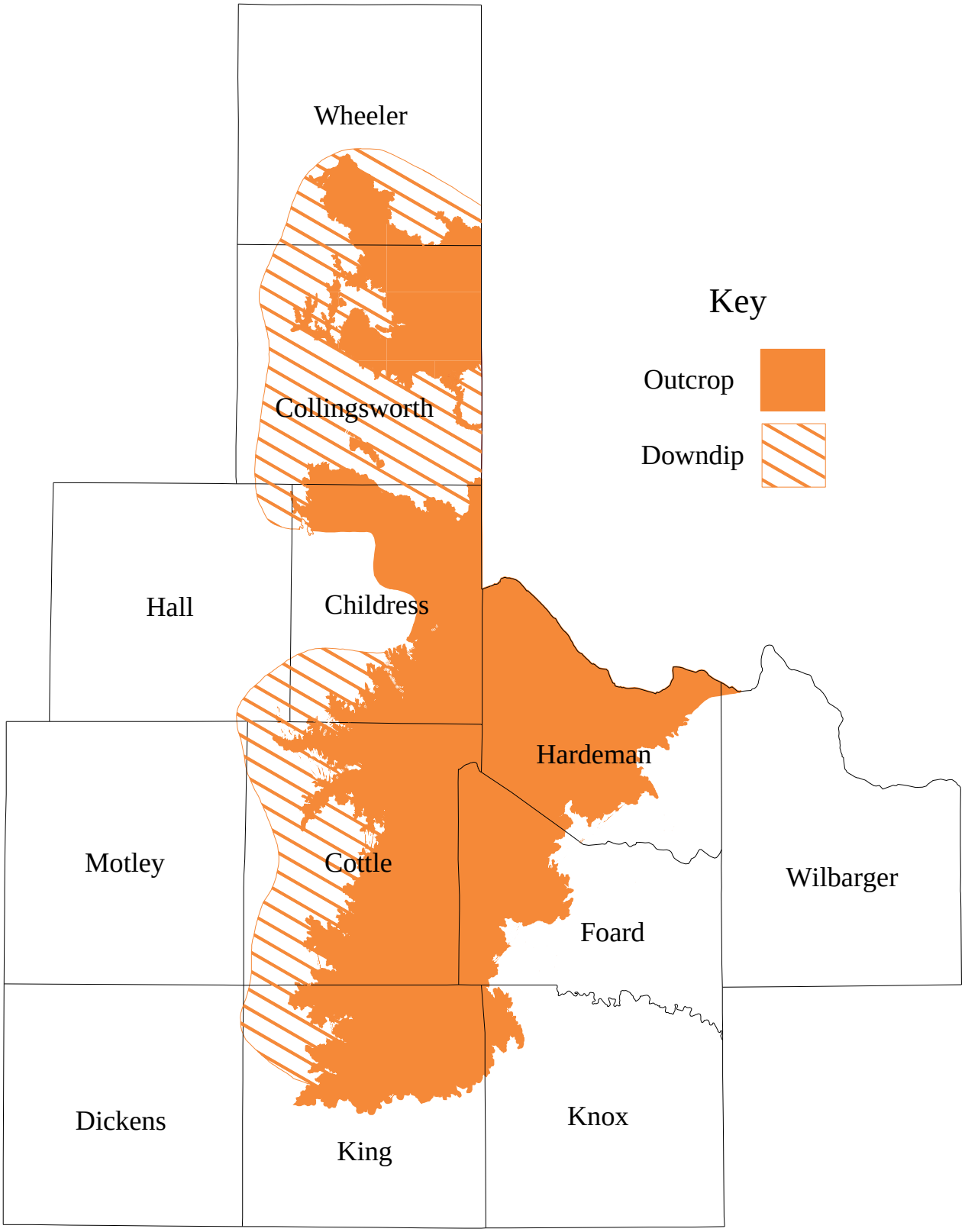
Blaine


Wheeler
Collingsworth
Hall
Childress
Hardeman
Motley
Cottle
Foard
Wilbarger
Dickens
King
Knox
Key
Outcrop
Downdip

Blaine Aquifer

The Blaine aquifer provides water in nine counties in West-Central Texas from Wheeler County to King County, extending eastward in the subsurface to adjacent counties. Although the formation is present farther south, the limited use of its water does not justify its inclusion as a minor aquifer in that area. Saturated thickness of the aquifer approaches 300 feet in its northern extent. The Blaine Formation, of Permian age, contains water primarily in numerous solution channels.

Water recharged to the aquifer moves along solution channels in the formation dissolving evaporite deposits of anhydrite and halite, which, in turn, contribute to its overall poor quality. Dissolved-solids concentrations in the Blaine increases with depth of the aquifer and in natural discharge areas along surface drainages. The extent of the aquifer, based on usage, includes water containing less than 10,000 mg/l dissolved solids.

The primary use of Blaine ground water is for irrigation of highly salt-tolerant crops. Well yields vary from a few gallons per minute to more than 1,500 gal/min. Seasonal water-level declines are limited to those areas dependent on ground water for irrigation.

References

Maderak, M.L., 1972, Ground-water resources of Hardeman County, Texas: TWDB Rept. 161, 45 p.

Richter, B.C., and Kreitler, C.W., 1986, Geochemistry of salt-spring and shallow subsurface brines in the Rolling Plains of Texas and Southwestern Oklahoma: Univ. of Texas, Bureau of Economic Geology Rept. of Inv. No. 155, 47 p.

Smith, J.T., 1970, Ground-water resources of Collingsworth County, Texas: TWDB Rept. 119, 115 p.