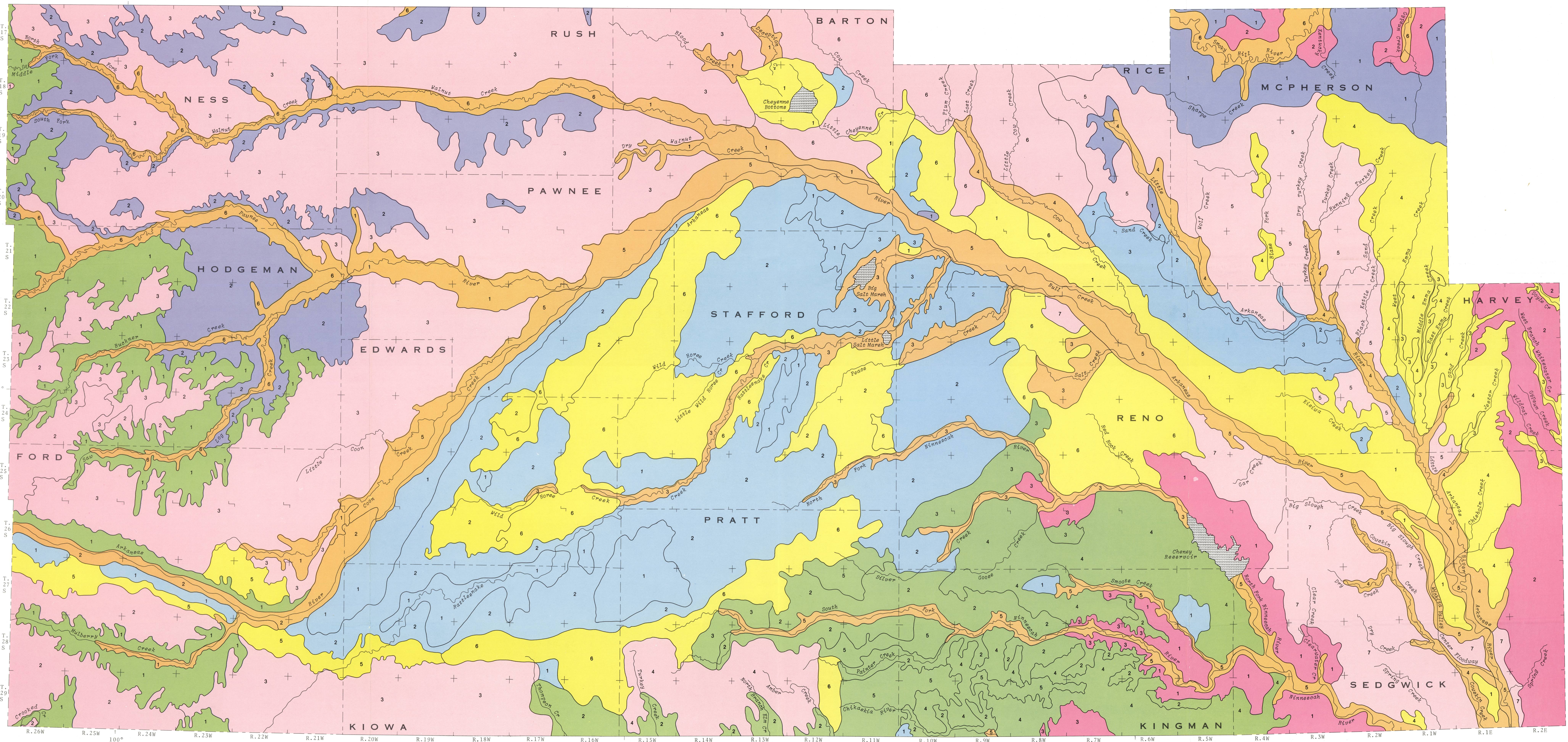


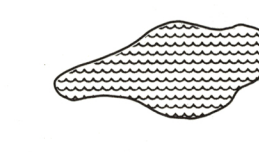
SOIL ASSOCIATIONS OF SOUTH-CENTRAL KANSAS
Lawrence R. Hathaway and Harold P. Dickey



EXPLANATION

- | | | | | | | |
|---|---|---|--|---|---|--|
| <p>SOILS FORMED IN LOESS AND OLD ALLUVIUM (PLEISTOCENE AND PLEISTOCENE AGE SEDIMENTS)</p> <p>The general availability of groundwater from the unconsolidated sediments in areas overlain by these soils is highly variable. The greatest groundwater yields are associated with the Ogallala Formation in the western part of the mapped area and the Pliocene-Pleistocene sediments of the Equus Beds in the eastern part of the mapped area. The quality of the groundwater from the Ogallala Formation or Equus Beds in areas associated with these soils is generally good except where contaminated by local brine sources.</p> | <p>SOILS FORMED IN OLD ALLUVIUM, DUNE SAND, AND LOESS (PLIOCENE AND PLEISTOCENE AGE SEDIMENTS)</p> <p>Observations regarding depth to water and water quality for regions overlain by soils formed from dune sand also generally apply to the areas covered by soils of this group.</p> | <p>SOILS FORMED IN RECENT ALLUVIUM</p> <p>The depth to the water table in areas covered by these soils is generally less than 25 feet. The alluvial materials of the major drainages represent the principal source of groundwater in the northwestern portion of the mapped area. Elevated dissolved-solids levels may be encountered in groundwaters from unconsolidated deposits underlying these soils, especially in the Arkansas River Valley and drainages of the eastern Great Bend Prairie.</p> | <p>SOILS FORMED IN OLD ALLUVIUM, LOESS, AND DUNE SAND (PLIOCENE AND PLEISTOCENE AGE SEDIMENTS)</p> <p>The availability of groundwater from unconsolidated sediments underlying these soils is variable, but generally limited in extent.</p> | <p>SOILS FORMED IN DUNE SAND</p> <p>The depth to water beneath these soils is variable. A general deterioration of groundwater quality with depth into the unconsolidated aquifer is noted in the eastern Great Bend Prairie where the overlying soils are derived mainly from dune sand or a combination of old alluvium, loess, and dune sand.</p> | <p>SOILS FORMED IN PERMIAN MATERIALS</p> <p>Groundwater availability in areas covered by these soils is limited.</p> | <p>SOILS FORMED IN CRETACEOUS MATERIALS, PLEISTOCENE LOESS, AND OLD ALLUVIUM</p> <p>Groundwater availability in areas covered by these soils is limited.</p> |
| <p>1 RICHFIELD-ULYSSES
Occur on nearly level landscapes in extreme northwest and west-central part of area. Silty surface layer and a clayey or silty subsoil. Little or no runoff to stream systems. The small areas of these soils fit into larger regions of Richfield-Ulysses-Spearville-Kelch association found on Map M-8A.</p> | <p>1 CARWILE-FARNUM-DRUMMOND
Occur on nearly level landscapes along Arkansas River Valley in east half of area. Loamy surface layer and a clayey or silty subsoil. Saline soils locally. Only small amount of runoff to stream systems.</p> | <p>1 NEW CAMBRIA-HORD-BRIDGEPORT-DALE
Occupy the nearly level Arkansas River tributary valleys in west-central part of area. Silty surface layer and a clayey or silty subsoil. Saline soils locally.</p> | <p>1 PENDEN-MANSIC-CAMPUS
Occur on gently sloping to steep landscapes along drainageways in west-central part of area. Loamy surface layer and subsoil. Several outcrops of Ogallala Formation. Some soils are moderately deep. These soils similar to soils of Mansic-Penden-Richfield-Ulysses association mapped in eastern part of Map M-8A.</p> | <p>1 PRATT-TIVOLI
Sandy soils on undulating and hilly landscapes mostly in southwest and central parts of area. Little or no runoff to stream systems. Represent an eastward extension of Tivoli-Vona-Pratt association found south of Arkansas River Valley on Map M-8A.</p> | <p>1 RENFROW-OWENS-VERNON
Occur on gently sloping to strongly sloping landscapes in south-central part of area. Silty or loamy surface layer and clayey subsoil. Some soils are shallow and moderately deep over red shale.</p> | <p>1 LANCASTER-HEVILLE
Occur on sloping to moderately steep landscapes in northeast part of area. Loamy surface layer and subsoil. Soils are moderately deep and shallow over sandstone and shale.</p> |
| <p>2 HARNEY-SPEARVILLE-ULYSSES
Occur on broad, nearly level landscapes in southwest and west-central part of area. Silty surface layer and a clayey or silty subsoil. Little or no runoff to stream systems. Spearville-Harney association, found in eastern part of Map M-8A, merges into these soils.</p> | <p>2 FARNUM-BLANKET-LUBBOCK
Occur on nearly level landscapes in central part of area. Loamy or silty surface layer and a loamy or clayey subsoil. Only small amount of runoff to stream systems.</p> | <p>2 CANADIAN-LAS ANIMAS-LESHARA
Occupy the nearly level and gently undulating Arkansas River Valley in western third of area. Loamy or sandy surface layer and loamy or sandy underlying material. Saline and sodic soils locally. Merge with Las Animas-Elanco-Bridgeport association found in eastern Arkansas River Valley region of Map M-8A.</p> | <p>2 ALBION-SHELLABARGER-FARNUM
Occur on gently sloping to strongly sloping landscapes along drainageways in south-central part of area. Loamy surface layer and loamy or sandy underlying material.</p> | <p>2 PRATT-CARWILE-ATTIGA-NARON
Occur on nearly level and undulating landscapes in central part of area. Sandy or loamy surface layer and a sandy, clayey, or loamy subsoil. Only small amount of runoff to stream systems.</p> | <p>2 IRWIN-ROSEHILL-CLIME
Occur on gently sloping to strongly sloping landscapes in eastern part of area. Silty or clayey surface layer and clayey subsoil. Some soils are moderately deep over shale.</p> | <p>2 HARNEY-WAKEN-HEIZER-PENDEN
Occur on nearly level to steep landscapes in northwest and north-central parts of area. Silty or loamy surface layer and a clayey, silty, or loamy subsoil. Some soils are moderately deep and shallow over limestone or shale.</p> |
| <p>3 HARNEY-LULY
Occur on broad, nearly level to sloping landscapes in west half of area. Silty surface layer and a clayey or silty subsoil. Only small amount of runoff to stream systems.</p> | <p>3 FARNUM-HOBBS-GEARY
Occur on nearly level to sloping landscapes along drainageways in east-central part of area. Loamy or silty surface layer and subsoil. In a few places soils are moderately deep over shale.</p> | <p>3 PLEVNA-DRUMMOND-FARNUM-WALDECK
Occupy the nearly level small valleys in central part of area. Loamy surface layer and sandy, clayey, or loamy underlying material. Saline and sodic soils frequent.</p> | <p>3 FARNUM-OST-CLARK
Occur on nearly level to strongly sloping landscapes in south-central part of area. Loamy surface layer and subsoil. Loamy underlying material of Ost and Clark soils contains many soft and hard masses of calcium carbonate.</p> | <p>3 DILLWYN-TIVOLI-PLEVNA
Occur on nearly level to hilly landscapes in north-central part of area. Sandy or loamy surface layer and subsoil. Loamy underlying material of Ost and Clark soils contains many soft and hard masses of calcium carbonate.</p> | <p>3 QUINLAN-NASHVILLE-NASH
Occur on gently sloping to strongly sloping landscapes in south-central part of area. Loamy or silty surface layer and subsoil. Soils are shallow and moderately deep over red siltstone and fine-grained sandstone.</p> | |
| <p>4 BETHANY-CLARK-OST
Occur on nearly level and gently sloping landscapes in south half of Pratt County. Silty or loamy surface layer and a clayey or loamy subsoil. Only small amount of runoff to stream systems.</p> | <p>4 LADYSMITH-GOESSEL
Occur on nearly level and gently sloping landscapes in east-central part of area. Silty or clayey surface layer and clayey subsoil.</p> | <p>4 HOBBS-ELANCO-DETROIT
Occupy the nearly level small valleys in east-central part of area. Silty surface layer and silty or clayey underlying material.</p> | <p>4 FARNUM-SHELLABARGER
Occur on nearly level to sloping landscapes in south-central part of area. Loamy surface layer and subsoil. Only small amount of runoff to stream systems.</p> | | | |
| <p>5 CRETE-SMOLAN
Occur on nearly level to sloping landscapes in north-east part of area. Silty surface layer and clayey subsoil. A few occurrences of saline and sodic soils.</p> | <p>5 HOLDREDGE-ORTELLO
Occur on nearly level and undulating landscapes in southwest part of area. Silty surface layer and clayey subsoil. Only small amount of runoff to stream systems. These soils closely related to Mantel-Ulysses-Satana soil association shown south of Arkansas River Valley on Map M-8A.</p> | <p>5 CANADIAN-WALDECK-PLATTE-LESHO
Occupy the nearly level and gently undulating Arkansas River Valley in western third of area. Loamy or sandy surface layer and loamy or sandy underlying material. Saline and sodic soils locally.</p> | <p>5 CLARK-BLANKET-PRATT
Occur on nearly level to strongly sloping landscapes in south-central part of area. Some landscapes undulating. Loamy, silty, or sandy surface layer and a loamy, clayey, or sandy subsoil. Loamy underlying material of Clark soils contains many soft and hard masses of calcium carbonate.</p> | | | |
| <p>6 CRETE-GEARY
Occur on nearly level and gently sloping landscapes in north-central part of area. Silty surface layer and a clayey or silty subsoil. Only small amount of runoff to stream systems.</p> | <p>6 NARON-FARNUM-CARWILE
Occur on nearly level and gently sloping landscapes in central part of area. Loamy surface layer and a loamy or clayey subsoil. Only small amount of runoff to stream systems.</p> | <p>6 ROXBURY-BRIDGEPORT
Occupy the nearly level valleys in northwest and northeast part of area. Silty surface layer and subsoil, or clayey subsoil.</p> | | | | |
| <p>7 BLANKET-FARNUM-VANOSS
Occur on nearly level and gently sloping landscapes in southeast part of this area. Silty or loamy surface layer and a clayey, loamy, or silty subsoil. Only small amount of runoff to stream systems. A few occurrences of saline and sodic soils.</p> | | | | | | |

OPEN WATER



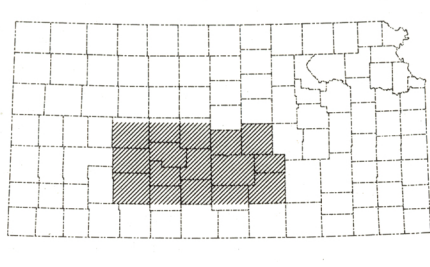
ACKNOWLEDGMENTS

1. Soil association data are based upon U.S. Department of Agriculture, Soil Conservation Service, county soil survey reports by B. R. Dodge, B. L. Tomlin, R. L. Baberman, W. C. Rife, J. B. Baumann, M. L. Horch, D. A. Gier, B. R. Hoffman, L. W. Dowd, S. A. Glauw, D. E. Rott, W. A. Wehmuller, H. L. Penner, J. J. Rockers, L. Ratcliff, and E. F. Boush.

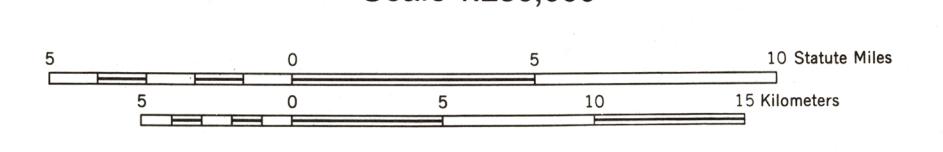
2. Water-quality information is based upon data from Kansas Geological Survey studies of chemical quality of irrigation waters in western Kansas by L. R. Hathaway, O. K. Galle, T. C. Waugh, and H. P. Dickey.

3. This map was prepared by Renate Henick and Carolyn Wynn of the Graphic Arts Section of the Kansas Geological Survey.

INDEX MAP



Scale 1:250,000



Colored areas represent soil associations named for major soils. There are other soils of lesser extent within these associations.