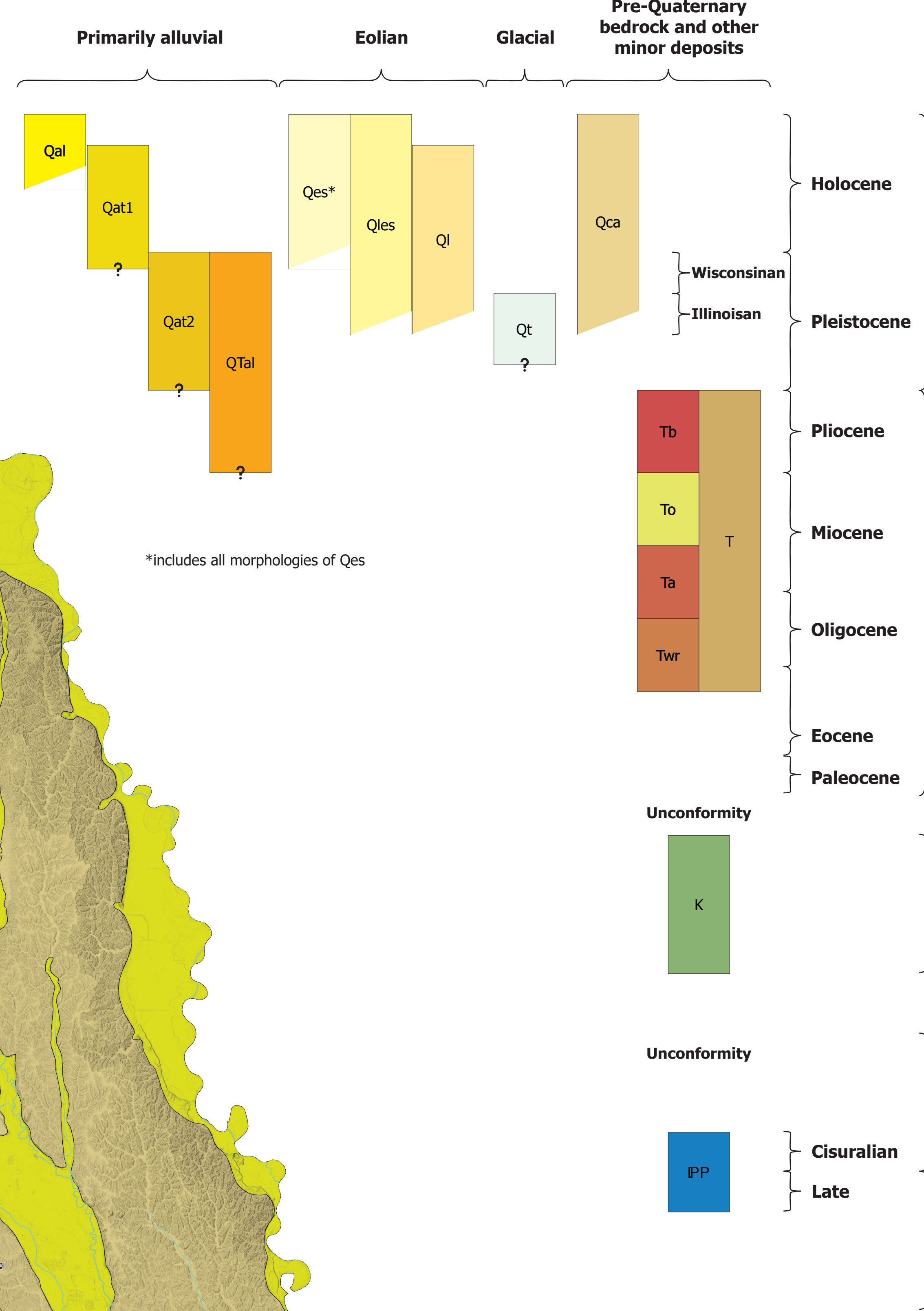


Figure 1. Map of loess thickness in Nebraska. These isopachs are adopted from the Des Moines (Hallberg et al., 1991) and Platte River (Swinehart et al., 1994) 4° x 6° Quadrangles and modified to extend west of 102° W, where the Platte River Quadrangle ends.

## Correlation of Map Units



## water

water (Holocene)

## Primarily alluvial deposits

- Qal Alluvium (Holocene)
- Qat1 Younger alluvial terraces (Holocene to late Pleistocene)
- Qat2 Older alluvial terraces (Pleistocene)
- Qta1 Very old alluvium (Pleistocene to Pliocene)

## Eolian deposits

- Qes Eolian sand (Holocene to late Pleistocene)
  - Qes-sv sand sheet and very low relief dunes
  - Qes-sm sand sheet and moderate relief dunes
  - Qes-l linear dunes
  - Qes-dcc dome-like compound and complex dunes
  - Qes-dsc dome-like simple and complex dunes
  - Qes-dr domal-ridge dunes
  - Qes-p parabolic dunes
  - Qes-bc close-spaced barchan dunes
  - Qes-bi intermediate-spaced barchan dunes
  - Qes-bw wide-spaced barchan dunes
  - Qes-bb barchanoid-ridge barchan dunes
- Ql Loess (Holocene to middle Pleistocene)
- Qles Loess and eolian sands (Holocene to middle Pleistocene)

## Glacial deposits

- Qt Pre-Illinoian till covered by thin Wisconsinan loess (Holocene to early Pleistocene)

## Pre-Quaternary bedrock and residuum, colluvium, and other minor mantling deposits

- Qca Colluvium and alluvium (Quaternary)
- T Upper Eocene to Pliocene sediments and bedrock (Pliocene to late Eocene)
- Tb Broadwater Formation (Pliocene)
- To Ogallala Group (late and middle Miocene)
- Ta Arikaree Group (early Miocene and late Oligocene)
- Twr White River Group (early Oligocene and late Eocene)
- K Cretaceous bedrock, undifferentiated (Cretaceous)
- P Pennsylvanian and Permian bedrock, undifferentiated (Late Pennsylvanian to Cisuralian)

## Explanation

- Rivers and streams
- Contact
- Internal contact
- Glacial terminus

Line symbols are solid where accurate, dashed where approximate or inferred, dotted where concealed, and queried where existence is questionable

Intermittent exposure of underlying unit

Map unit stack relationship, where Y is beneath X and may occasional crop out

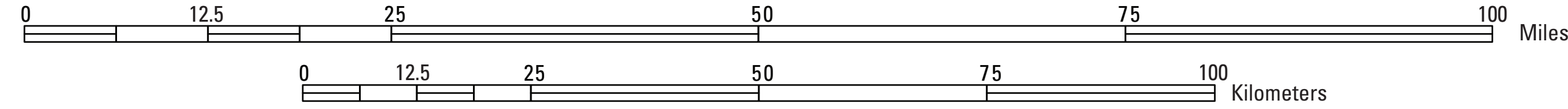
- Rivers and streams

## GEOLOGIC MAP OF NEBRASKA

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2025

Scale: 1:500,000



## References

- Hallberg, G.R., Lineback, J.A., Mickelson, D.M., Knox, J.C., Goebel, J.E., Hobbs, H.C., Whitfield, J.W., Ward, R.A., Boeltstorff, J.D., Swinehart, J.B., Dreeszen, V.H., Richmond, G.M., Fullerton, D.S., and Christensen, A.C., 1991. Quaternary geologic map of the Des Moines 4° x 6° Quadrangle, United States: U.S. Geological Survey Miscellaneous Investigations Series Map I-1420 (N14-1), [https://ngmdb.usgs.gov/Prodes/prodesecr\\_9217.htm](https://ngmdb.usgs.gov/Prodes/prodesecr_9217.htm).
- Swinehart, J.B., Dreeszen, V.H., Richmond, G.M., Tipton, M.J., Bretz, R., Steece, F.V., Hallberg, G.R., and Goebel, J.E., 1994. Quaternary geologic map of the Platte River 4° x 6° quadrangle, United States: U.S. Geological Survey U.S. Geological Survey Miscellaneous Investigations Series Map I-1420 (N14-1), [https://ngmdb.usgs.gov/Prodes/prodesecr\\_9216.htm](https://ngmdb.usgs.gov/Prodes/prodesecr_9216.htm).
- Differential, J.R., Voornies, M.R., Voornies, E.J., LaBarry, H.E., Timperley, C.L., and Perkins, M.E., 2008. GEOLOGIC MAP OF THE O'NEILL 1° x 2° QUADRANGLE, NEBRASKA, WITH CONFIGURATION MAPS OF SUBURFACE OF FORMATIONS: SCHOOL OF NATURAL RESOURCES, CONSERVATION AND SURVEY DIVISION, INSTITUTE OF AGRICULTURE AND NATURAL RESOURCES, UNIVERSITY OF NEBRASKA-LINCOLN. GEOLOGIC MAP GNC-39, <https://digitalcommons.unl.edu/nrespapers/39/>.
- Differential, J.R., 1991. Geologic map showing configuration of the bedrock surface, North Platte, 1° x 2° quadrangle, Nebraska: U.S. Geological Survey Miscellaneous Investigations Series Map I-2277.
- Swinehart, J.B., and Differential, J.R., 1997. Geologic map of the Scottsbluff 1° x 2° quadrangle, Nebraska and Colorado: U.S. Geological Survey IMAP 2945, <https://doi.org/10.3133/2945>.
- Scott, G.R., 1978. Map showing geology, structure, and oil and gas fields in the Sterling 1° x 2° quadrangle, Colorado, Nebraska, and Kansas: U.S. Geological Survey U.S. Geological Survey Miscellaneous Investigations Series Map I-1992, [https://ngmdb.usgs.gov/Prodes/prodesecr\\_8950.htm](https://ngmdb.usgs.gov/Prodes/prodesecr_8950.htm).
- NCSD Dunes Dune Types of Nebraska, <https://ncsu.edu/data/geography/index.aspx>.
- NCSD 246, Multiple Publication Dates, 7.5° Geologic maps published by the Nebraska Conservation and Survey Division in Northwest Nebraska, <https://ncsu.edu/csd/geology/statemap.aspx>.
- Cannon, J.M., 2000. Geologic Studies of the Platte River, South-Central Nebraska and Adjacent Areas—Geologic Maps, Subsurface Study, and Geologic History: U.S. Geological Survey Professional Paper 1706, Plates 1 & 2, <https://pubs.usgs.gov/pp/pp1706/>.
- U.S. Geological Survey, 2022. 1 Arc-second Digital Elevation Models (DEM) - USGS National Map 3DEP Downloadable Data Collection, <https://www.usgs.gov/3d-elevation-program>.
- NRCS, 2023. SSURGO, <http://websoilsurvey.sc.egov.usda.gov/>.
- NCSD Soils Nebraska Soils GIS Data, <https://ncsu.edu/data/geography/soil.aspx>.

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