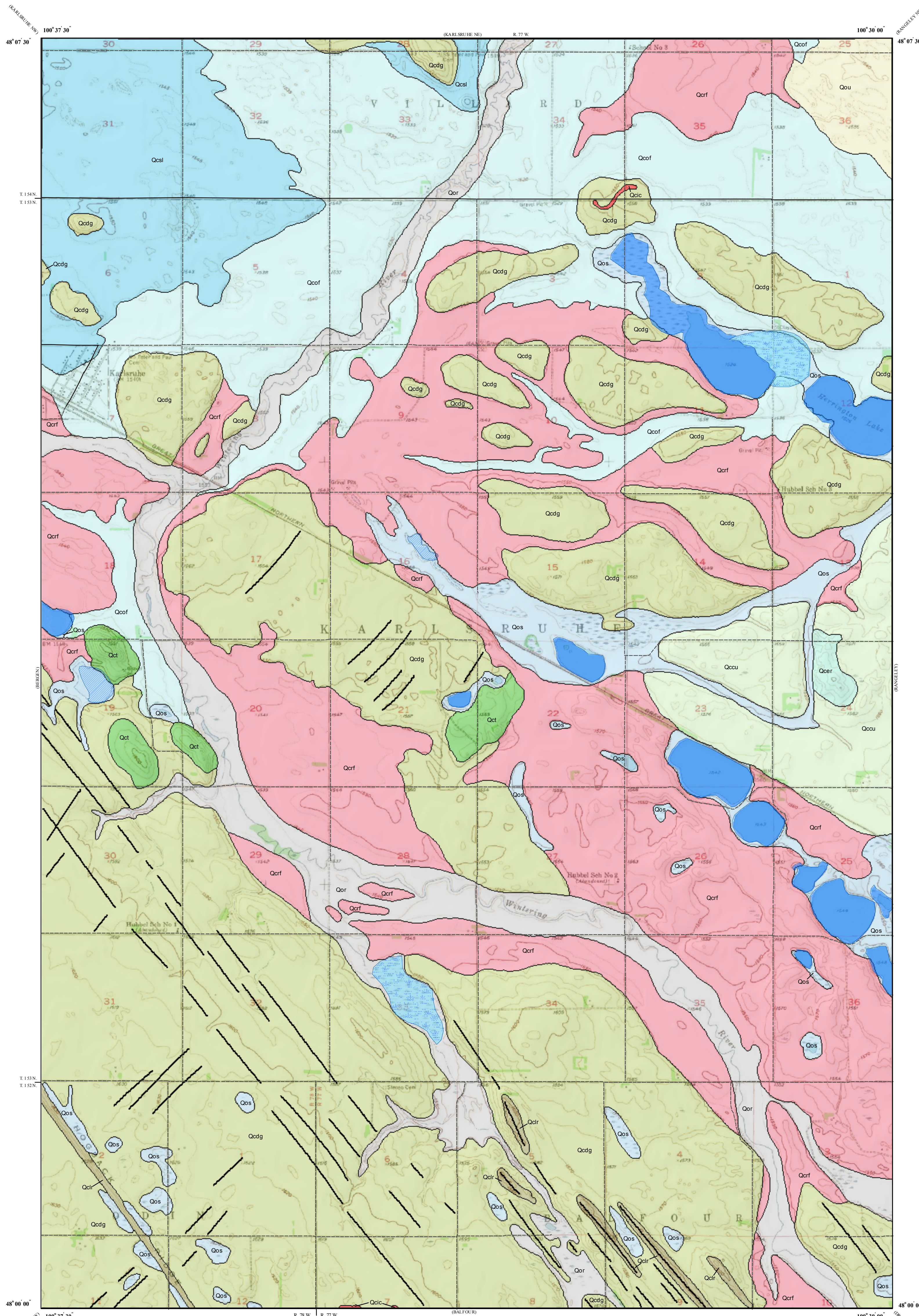


Surface Geology

Karlsruhe Quadrangle, North Dakota

John P. Bluemle
2007



EXPLANATION

QUATERNARY SYSTEM

RECENT

OAHE FORMATION

Qor Alluvium

River and stream sediment. Dark obscurely bedded clay and silt (mainly overbank sediment); generally overlying cross-bedded sand (channel sediment); on plains of modern streams.

Qos Pond and Slough Sediment

Dark, obscurely bedded clay and silt, in modern ephemeral ponds.

Qou Windblown Sediment

Well-sorted, fine sand and black silt with obscure bedding and weak paleosols; undulating to slightly rolling.

PLEISTOCENE

COLEHARBOR GROUP

Silt Facies

Lake sediment. Laminated silty clay, clayey silt, and fine sand of glacier-dammed lakes; yellowish-brown to dark gray in exposures depending on weathering intensity.

Qesl Shoreline Sediment

Well-sorted sand.

Qcof Lake Sediment

Flat-bedded lake sediment on low-lying plains.

Sand and Gravel Facies

River sediment. Moderately well-sorted, cross bedded sand and plane-bedded gravel, including sediment of meltwater rivers.

Qcrf Flat Fluvial Plains

Flat-bedded sediment of nearly level plains and river terraces, commonly with braided channel scars, oxbows, and other relict markings; relief of 1 to 10 feet.

Qcic Ice-Contact Deposits

Mainly gravel and sand with cobbles and boulders common; inclusions of glacial sediment common; local relief up to 50 feet; eskers and kames.

Till Facies

Glacial sediment. Unsorted, unbedded mixture of angular, subangular, and rounded blocks of rock, gravel, and sand, generally in a stiff matrix of silt and clay; yellowish-brown to olive-gray in exposures depending on weathering intensity; contains discontinuous lenses of gravel and sand.

Qcdg Thin Layer of Till

Veneer of till draped over and only slightly modifying the pre-existing topography (pre-glacial bedrock, older till, or gravel surface); relief up to 75 feet locally.

Qqer River-Eroded Glacial Sediment

Glacial sediment with flat to undulating topography resulting from stream erosion in the bottom of large meltwater trenches or over broad areas of till that have been washed by running water; overlain by a thin layer of fluvial sediment of the Coleharbor group or Oahe Formation in places.

Qccu Collapsed Glacial Sediment-Undulating

Gently undulating to undulating surface with poorly integrated drainage; local relief generally less than 10 feet.

Qct Ice-Thrust Masses

Glacial sediment draped over glacial or preglacial sediment or rock that has been sheared up into thrust slabs or folds near the ice margin; hilly areas with intense internal linearity; local concentrations of gravel and boulders; local relief may exceed 150 feet.

Qqlr Longitudinal Ridges

(Drumlins - some of the narrower of these are shown by lines); trend of all longitudinal ridges in this area is from NW to SE. The ridges are composed of varying amounts of till, and re-worked (molded) fluvial or lake sediment. They range from a few hundred feet to several miles long. Local relief is generally less than 20 feet, except several ridges near Stink Lake are up to 75 feet high.

Geologic Symbols

— Known contact between two geologic units

— Ridge-Transverse

— Ridge-Longitudinal (runs from NW to SE)

Other Features

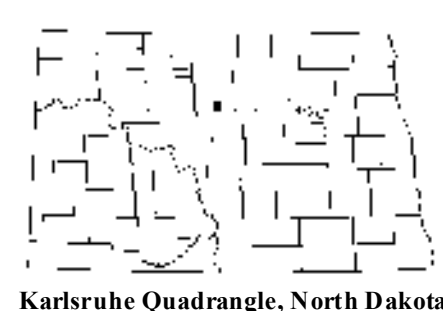
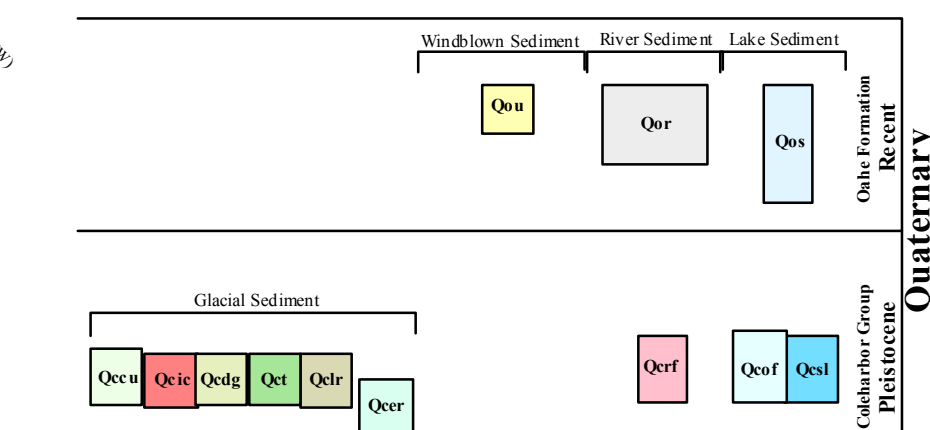
Water

Water - Intermittent

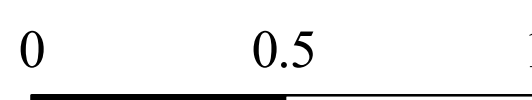
Marsh or Wetland-Intermittent

Paved Road

Unpaved Road



Scale 1:24,000



Miles

Lambert Conformal Conic Projection Standard Parallels 48° 00' 00" and 48° 07' 30"
1927 North American Datum NGVD 1929
USGS 7.5 Minute Topographic Map Contour Interval 10 Feet
Road and Hydrologic Layers Rectified to 2003 NAIP Digital Orthophoto

