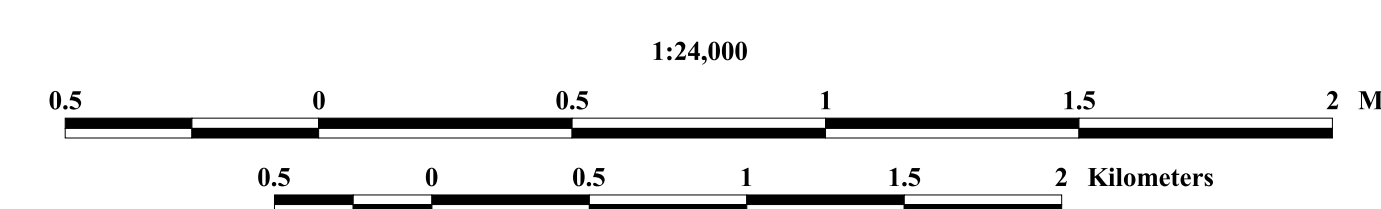
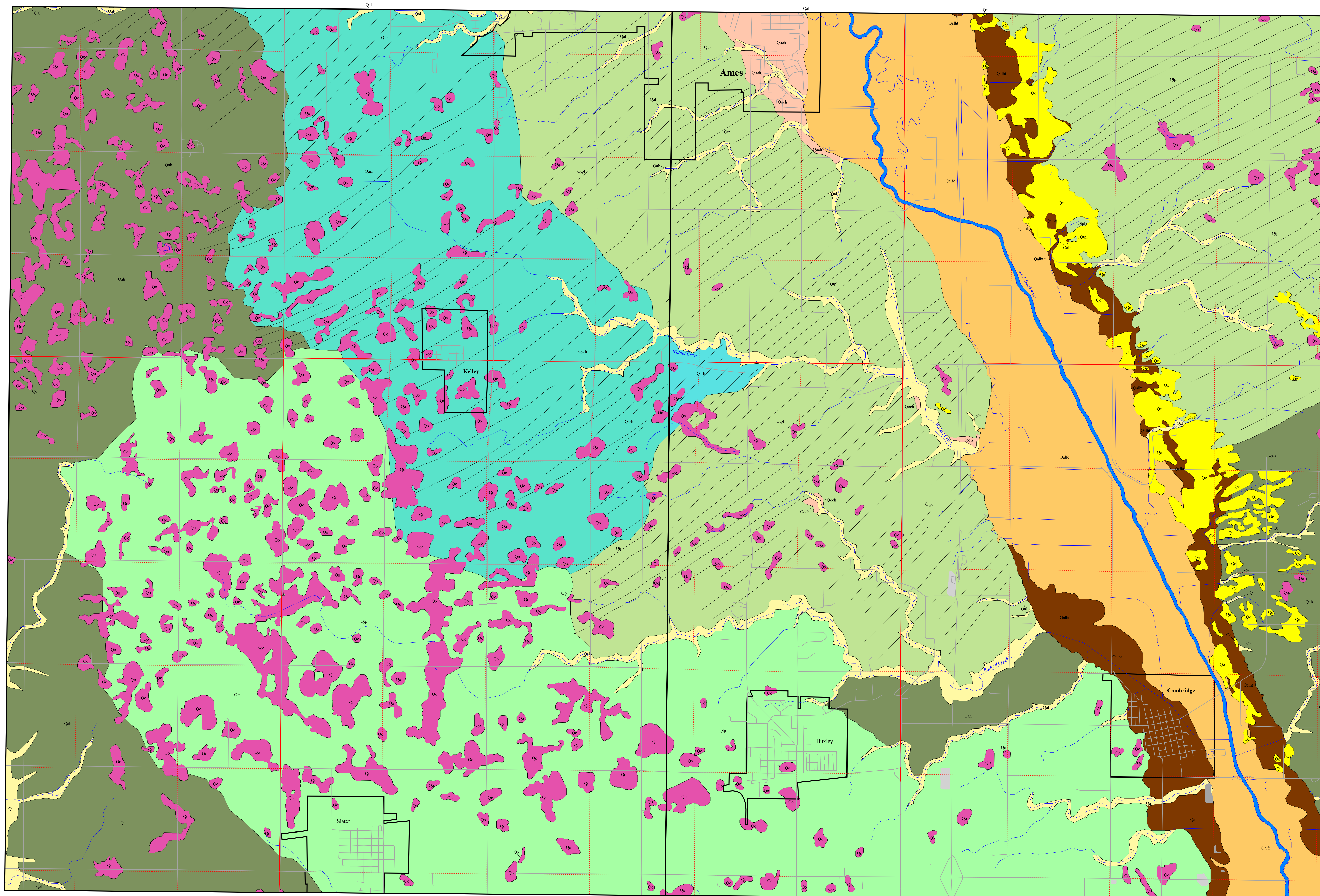


Surficial Geology of the Des Moines Lobe of Iowa Slater and Huxley 7.5' Quadrangles



SURFICIAL GEOLOGIC MAP OF THE DES MOINES LOBE OF IOWA

Hurley and Slater 7.5' Quadrangles
Geological Survey Bureau
Open File Map 2001-2
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LEGEND

Description of Mapping Units

- Hudson Epoch**
- Qd - Depressions** (Defunct Formation-Woods Mbr.) Generally 2.5 to 11 m of thick to very dark gray, calcareous silt, sand and silty clay loam with organic detritus in drained and saturated, closed and semi-closed depressions. Overlies gray, calcareous, massive, dense loam (Dows Fm.-Alton Mbr.) or Noah Creek Fm. sand and gravel. Associated with low relief features that occupy depressions and low sags on the landscape. Seasonal high water table.
 - Qv - Stream Valley - Alluvium** (Defunct Formation-Undifferentiated) Variable thickness of less than 1 m to 5 m of a very dark gray to brown, nonclayey to calcareous, stratified silty clay loam, silty clay loam, loam to sandy loam alluvium and colluvium in stream valleys, on hilltops and in flood depressions. May overlie Dows Formation (Morgan or Alton Mbr.), Noah Creek Formation, or Manassas or Des Moines bedrock. Associated with low relief modern floodplain, closed depressions, modern drainages or topographic positions on the landscape. Seasonal high water table and potential for frequent flooding.
 - Qr - Sand Dunes and Sand Sheets** (Dows Formation-sand facies) Generally less than 3 m of yellowish brown, massive, calcareous loamy sand to fine sand. May overlie yellowish brown coarse-grained sand and gravel (Noah Creek Fm.), or it may overlie yellowish to grayish brown, sandy calcareous, stratified loam to silt loam to sandy loam (Dows Fm.-Morgan Mbr.). Usually restricted to a narrow belt along major river valley bottoms or adjacent uplands on the Des Moines Lobe.
 - Qht - Des Moines and Noah River Valleys - High Terrace** (Defunct Formation-Gander Mbr. and Corrigan Mbr.) Variable thickness of less than 1 m to 7 m of very dark gray to brown, nonclayey, silty clay loam, silty loam or silt loam. Overlies Noah Creek Formation. Occasional terrace and valley margin positions 2 to 3 meters above the modern floodplain. Seasonal high water table and low potential for flooding.
 - Qsh - Noah River Valley - Flood Basin Channel Bank** (Defunct Formation-Camp Creek Mbr. and Roberts Creek Mbr.) Variable thickness of 2 to 6 m of very dark gray to brown, nonclayey, massive to stratified silty clay loam to loam to sandy loam alluvium and colluvium in the Noah River valley. A fluvial terrace or a thick (20-30 m) sequence of medium sand to pebbly sand overlies the Noah Creek Formation. Associated with low relief modern floodplain. Seasonal high water table and potential for frequent flooding.
- Late Wisconsin Epoch**
- Qt - Till Plain** (Dows Formation-Morgan Mbr.) Less than 8 m of yellowish brown, calcareous, fractured, stratified loam to silt loam to sandy loam (Dows Fm.-Alton Mbr.) or Noah Creek Fm. sand and gravel. Overlies gray, calcareous, massive, dense loam (Dows Fm.-Alton Mbr.). Low to moderate relief (1-3 m), exhibiting plains with irregular topography. Seasonal high water table.
 - Qtp - Till Plain with Lined and Ridge Forms** (Dows Formation-Morgan Mbr.) Less than 8 m of yellowish to grayish brown, calcareous, fractured, stratified loam to silt loam to sandy loam (Dows Fm.-Alton Mbr.) or Noah Creek Fm. sand and gravel. Overlies gray, calcareous, massive, dense loam (Dows Fm.-Alton Mbr.). Low relief (less than 1 m) to local relief, slightly undulating plain with irregular surface patterns. **Aligned Ridge Forms** (Dows Formation-Morgan Mbr.) Less than 8 m of yellowish brown, often calcareous, stratified loam to silt loam to sandy loam (Dows Fm.-Alton Mbr.). Well to moderately well defined aligned ridges, oriented transverse to glacier flow, are inset on till plain. Ridges are moderate to high relief features (3-8 m). Overall landform exhibits well and wide topography. Seasonal high water table.
 - Qck - Outwash Channels** (Noah Creek Formation) Generally less than 7 m of yellowish brown coarse-grained sand and gravel. Overlies gray, calcareous, massive, dense loam (Dows Fm.-Alton Mbr.). In valley positions, it occurs at the land surface of older terraces. On the modern floodplain, it is buried by Dows Fm. alluvium. Low relief landforms expressed as broad terraces, long narrow longitudinal terraces or cusped-shaped point terraces. Outwash terraces in the Des Moines River valley are predominantly bracketed on a gray, calcareous, massive, dense loam (Dows Fm.-Alton Mbr.). A few are based on Pennsylvanian bedrock, which is primarily dolitic siltstone, sandstone and mudstone associated with the Chouteau Group.
 - Qak - Aligned Hammocky Ridge Forms** (Dows Formation-Pike Knob Mbr. / Morgan Mbr.) Greater than 4 m and less than 10 m of yellowish brown, calcareous, stratified, sand and gravel with interbedded stratified loam (Dows Fm.-Alton Mbr.) or silt loam to sandy loam (Dows Fm.-Alton Mbr.). Fractured, stratified loam to silt loam to sandy loam (Dows Fm.-Alton Mbr.) or silt loam to sandy loam (Dows Fm.-Alton Mbr.). Low to moderate relief, less than 1 m to 3 m in local relief, slightly undulating plain with irregular surface patterns. **Aligned Ridge Forms** (Dows Formation-Morgan Mbr.) Less than 8 m of yellowish brown, often calcareous, stratified loam to silt loam to sandy loam (Dows Fm.-Alton Mbr.). Well to moderately well defined aligned ridges to elongated hammocks oriented transverse to glacier flow are inset on till plain. Hammocky ridges are moderate to high relief features (3-8 m). Overall landform exhibits well and wide topography. Low to moderate relief (3-8 m) on aligned hammocks. Seasonal high water table.
 - Qal - Aligned Ridge to Aligned Hammocky Ridge Forms** (Dows Formation-Morgan Mbr.) Greater than 2 m and less than 8 m of yellowish to grayish brown, calcareous, fractured, stratified loam to silt loam to sandy loam (Dows Fm.-Alton Mbr.) or silt loam to sandy loam (Dows Fm.-Alton Mbr.). Low to moderate relief, less than 1 m to 3 m in local relief, slightly undulating plain with irregular surface patterns. **Aligned Ridge to Aligned Hammocky Ridge Forms** (Dows Formation-Morgan Mbr.) Less than 8 m of yellowish brown, often calcareous, stratified loam to silt loam to sandy loam (Dows Fm.-Alton Mbr.). Well to moderately well defined aligned ridges to elongated hammocks oriented transverse to glacier flow are inset on till plain. Ridges or aligned hammocks are low to moderate relief features (3-8 m). Overall landform exhibits well and wide topography. Seasonal high water table.
 - Qp - Pin and Quarries** Limestone quarries and sand and gravel pits. Extent mapped as shown in county soil surveys.
 - Qf - Fill** Areas of major land filling. Fill associated with railroad grade, highway grade and land leveling. Variable in texture ranging from loamy to sandy to concrete rubble. Extent mapped as shown in county soil surveys.
- Ash of Inclusion

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