

# BEDROCK GEOLOGY OF SOUTHWEST IOWA

## DIGITAL GEOLOGIC MAP OF IOWA PHASE 5: SOUTHWEST IOWA

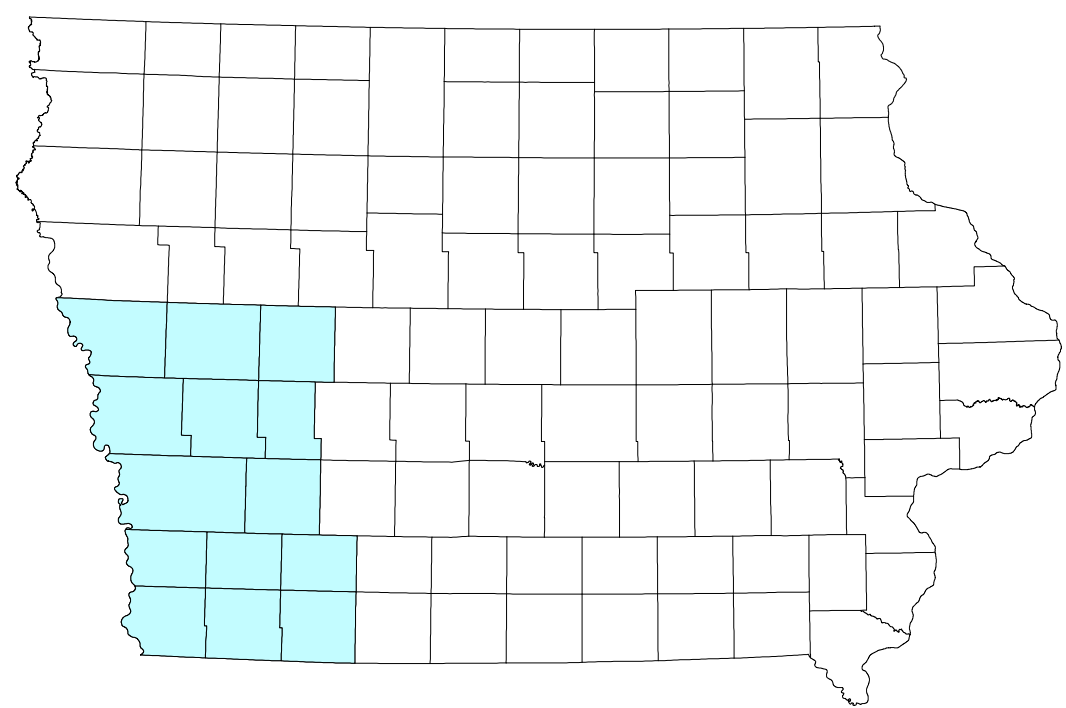
prepared by

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Iowa Geological Survey  
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### Description of Map Symbols

- GEOLOGIC UNIT CONTACTS
- BEDROCK WELL DATA POINTS
- COUNTY OR TOWN BOUNDARY
- MAJOR HIGHWAYS
  - Interstate Route
  - U.S. Route
  - State Route
- TOWNSHIP BOUNDARY
- LAKE, RIVER, OR STREAM
- FAULT ZONE  
(dashed where inferred)
  - u - identifies up-thrown block
  - d - identifies down-thrown block



Index Showing Area of Geologic Map

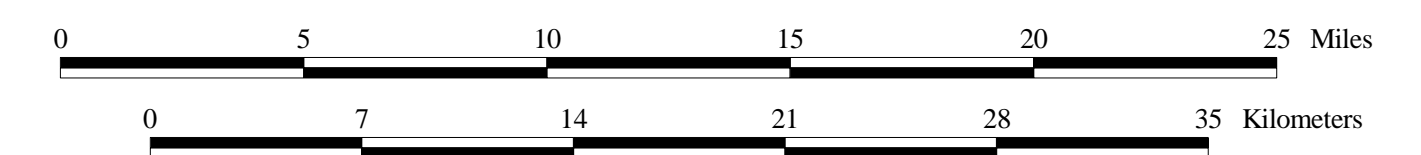
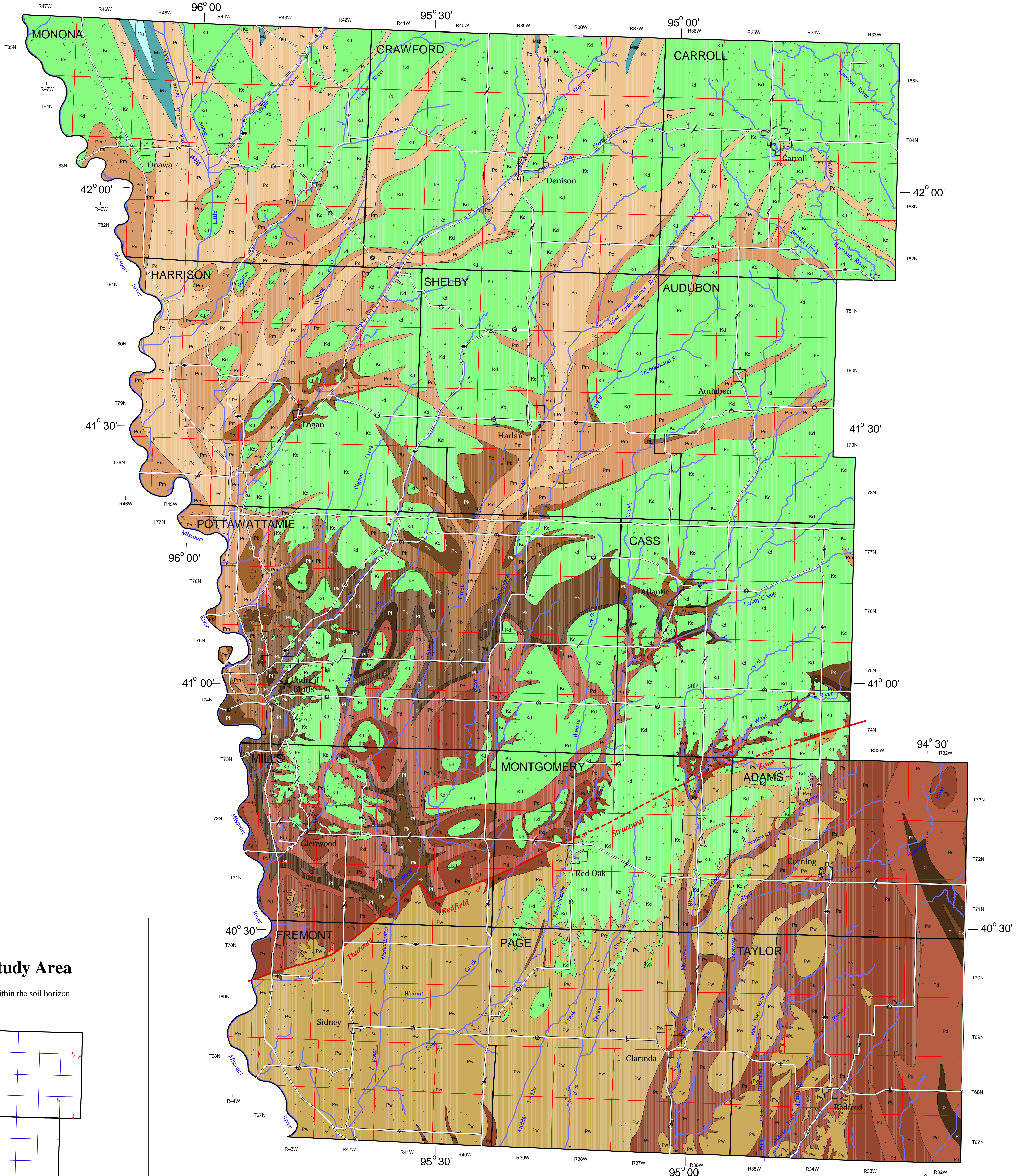
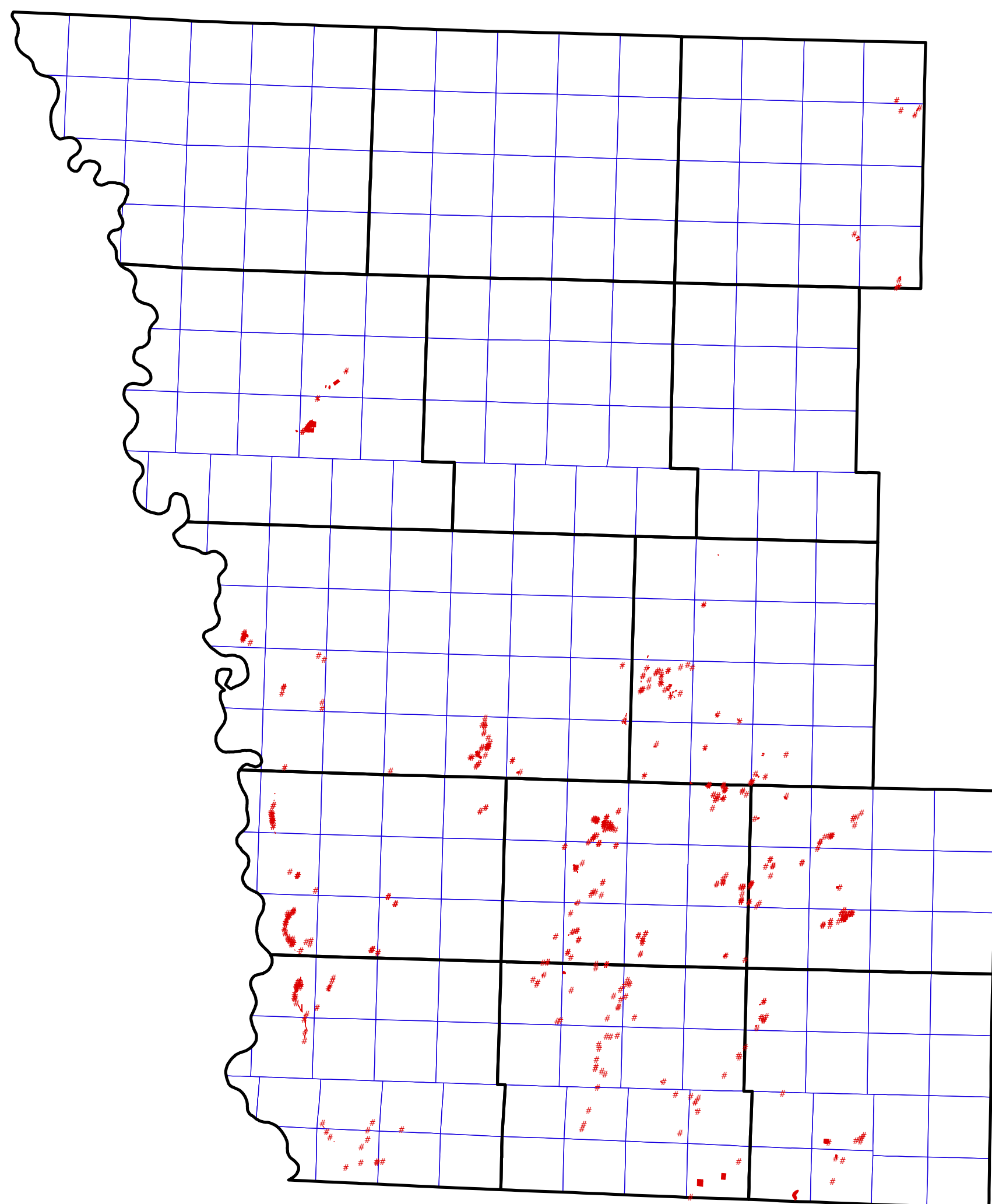
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### Rock Exposures in the Study Area

Areas of bedrock exposure or bedrock surface within the soil horizon



scale: 1:250,000  
(when printed at 36" x 42" format)

### LEGEND

#### Description of Rock Units

- |  |   |  |
|--|---|--|
| <p><b>CRETACEOUS</b></p> <p><b>Kd</b> Dakota Formation, mid Cretaceous (upper Albian). Maximum thickness 100 to 150 ft (30-45 m). Primary lithologies: sandstone, very fine to coarse-grained, part pebbly to conglomeratic, part cemented by iron oxide. Secondary lithologies: part calcareous mudstone, part red, part calcareous-siltstone; siltstone to very fine sandstone. Minor: black shale, coal.</p> <p><b>Pennsylvanian</b></p> <p><b>Pw</b> Wahnessee Group, Upper Pennsylvanian (upper Virgilian). Maximum thickness 120 to 150 ft (36-45 m). Primary lithologies: sandstone, very fine to coarse-grained, part laminated silt to sandy. Secondary lithologies: siltstone, part calcareous mudstone, part silt-laminated limestone, coarsely grained. Minor: chert, coal, black shale, phosphatic, very fine sandstone.</p> <p><b>Ps</b> Shawnee Group, Upper Pennsylvanian (middle Virgilian). Thickness 100 to 220 ft (30-67 m). Primary lithologies: limestone, fossiliferous, shale, gray. Secondary lithologies: part calcareous mudstone, part silt-laminated limestone, coarsely grained. Minor: chert, coal, black shale, phosphatic, very fine sandstone.</p> <p><b>Pd</b> Douglas Group, Upper Pennsylvanian (lower Virgilian-approximate Mississippian). Thickness 80 to 125 ft (24-38 m). Primary lithologies: shale and mudstone, gray, part silt-laminated. Secondary lithologies: fossiliferous, part coarsely grained, siltstone to very fine sandstone; mudstone, part red, part calcareous-siltstone. Minor: chert, black shale.</p> | <p><b>Pl</b> Lansing Group, Upper Pennsylvanian (upper Mississippian). Thickness 45 to 78 ft (14-24 m). Primary lithologies: limestone, fossiliferous, shale, gray. Secondary lithologies: coarsely grained mudstone to siltstone. Minor: black shale, phosphatic.</p> <p><b>Pk</b> Kansas City Group, Upper Pennsylvanian (middle Mississippian). Thickness 100 to 140 ft (30-43 m). Primary lithologies: limestone, fossiliferous, shale, gray. Secondary lithologies: limestone, coarsely grained, mudstone. Minor: chert, coal, black shale, phosphatic.</p> <p><b>Pb</b> Bronson Group, Pennsylvanian (lower Mississippian-approximate Des Moinesian). Thickness 100 to 130 ft (30-40 m). Primary lithologies: limestone, fossiliferous, shale, gray. Secondary lithologies: coarsely grained, black shale, phosphatic, mudstone to siltstone, gray. Minor: chert, coal, sandstone.</p> <p><b>Pm</b> Marquette Group, Middle Pennsylvanian (upper Des Moinesian). Thickness 125 to 170 ft (38-52 m). Primary lithologies: shale, gray; limestone, fossiliferous. Secondary lithologies: gray, green-gray, red, sandstone, very fine to medium-grained. Minor: coal, siltstone, pyrite.</p> | <p><b>Pc</b> Cherokee Group, Middle Pennsylvanian (Ankeny-Des Moinesian). Thickness varies over area; may be 80 to 150 ft (24-45 m) area of Pk bedrock surface 300-400 ft (90-120 m). Primary lithologies: shale, gray, part silt to sandy sandstone, very fine to coarse-grained. Secondary lithologies: black shale, calcareous, limestone, coal. Minor: siltstone, limestone, concretion, limestone, pyrite.</p> <p><b>MISSISSIPPIAN</b></p> <p><b>Msp</b> "St. Louis" and Pella Formations, Middle Mississippian (Meramecian). Thickness generally 40 to 80 ft (12-24 m), locally truncated beneath Pk. Primary lithologies: dolomite, part sandy; limestone, part fossiliferous to sandy. Secondary: shale, green-gray, calcareous; oolite; limestone; limestone breccia; sandstone. Minor: chert, chertoid.</p> <p><b>Ma</b> Augusta Group, Middle Mississippian (Osagean). Thickness 135 to 240 ft (41-73 m). Primary lithologies: dolomite, dolomitic limestone. Secondary: limestone, fossiliferous; shale, gray; glauconitic dolomitic chert. Minor: chertoid; quartz pebbles.</p> <p><b>Mg</b> Gilmore City Formation, Mississippian (lower Osagean-approximate Kimmswickian). Thickness 20 to 90 ft (6-27 m). Primary lithologies: limestone, fossiliferous; limestone, coarsely grained. Secondary: dolomite.</p> |
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