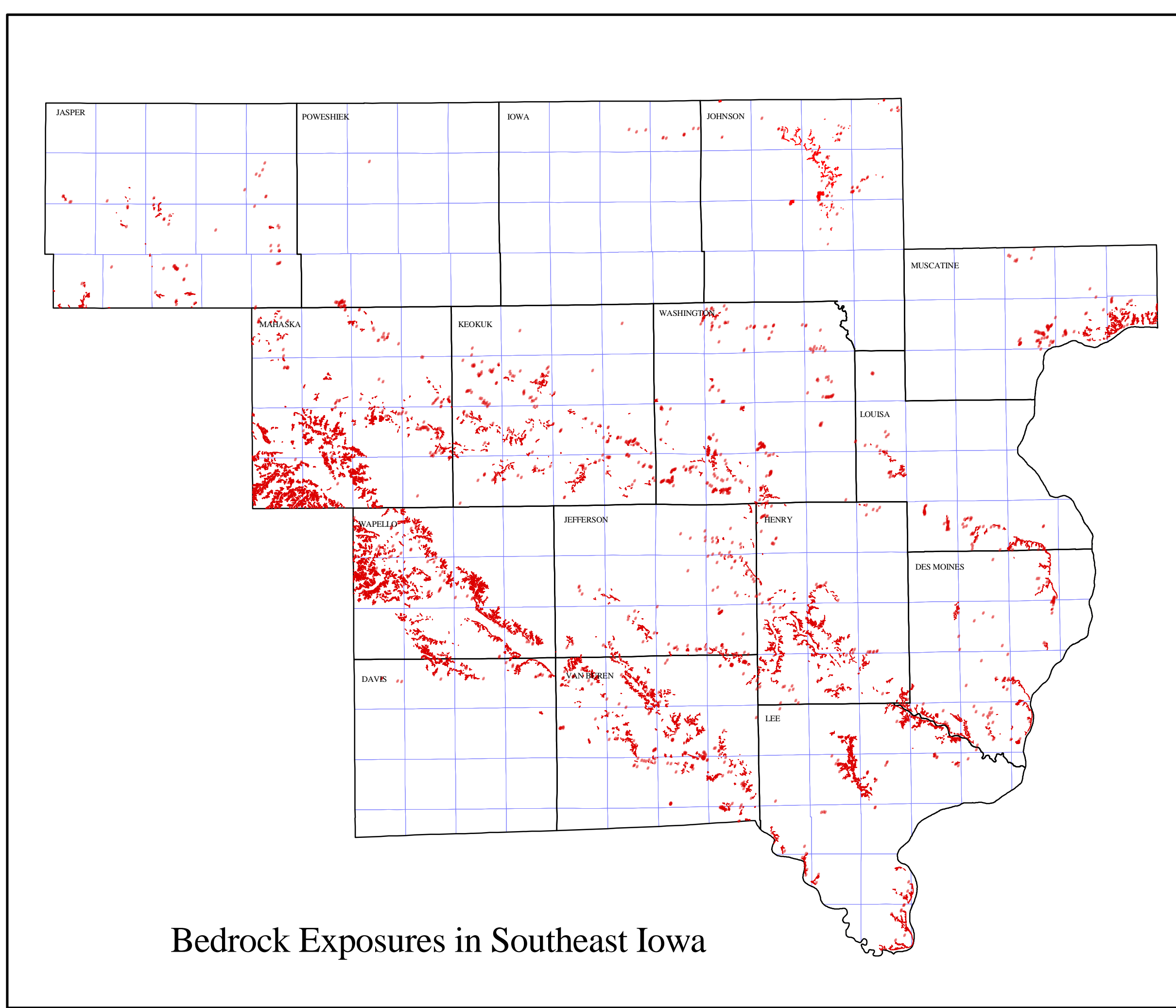
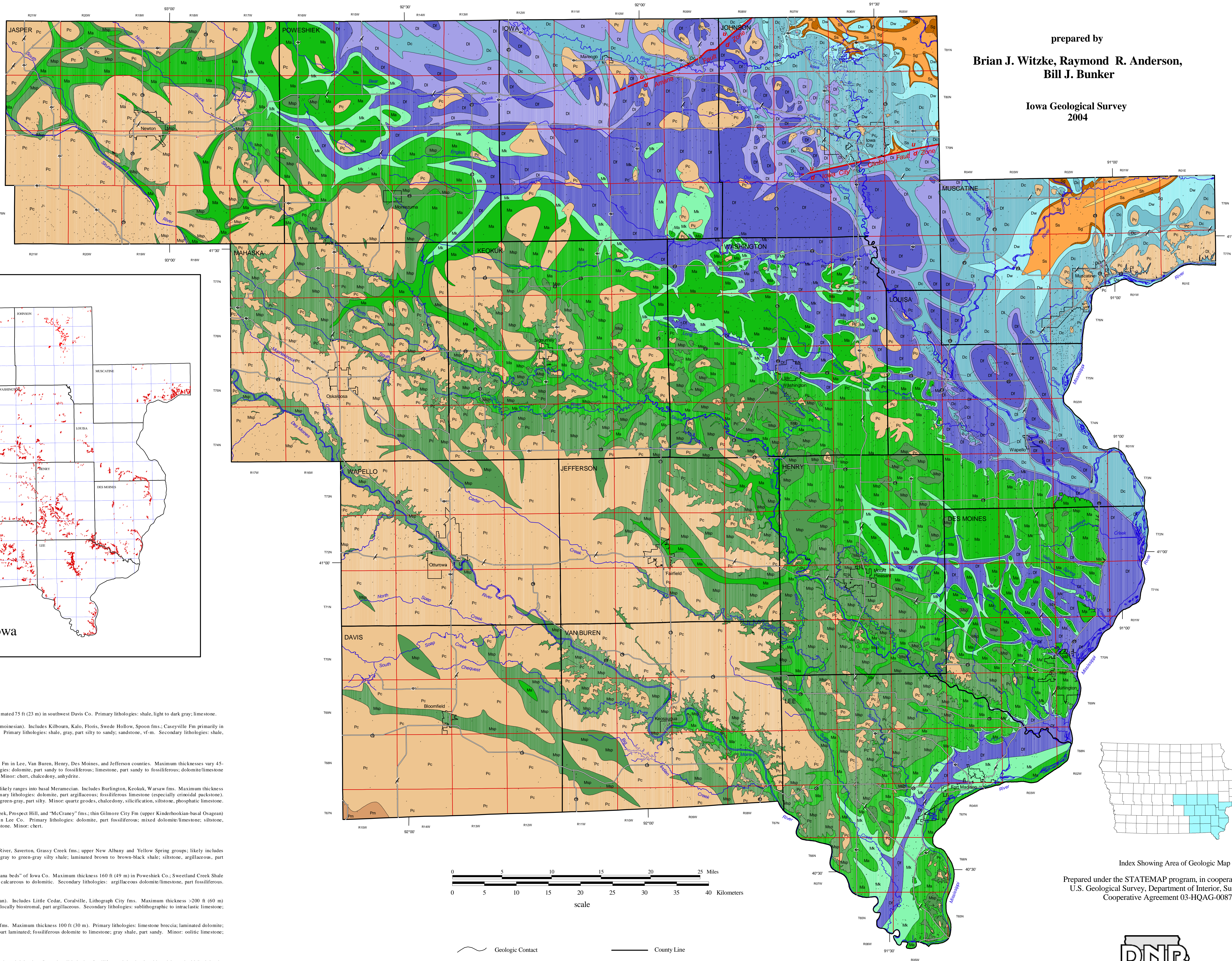


# Bedrock Geology of Southeast Iowa

## Digital Geologic Map of Iowa Phase 7: Southeast Iowa

prepared by  
**Brian J. Witzke, Raymond R. Anderson,  
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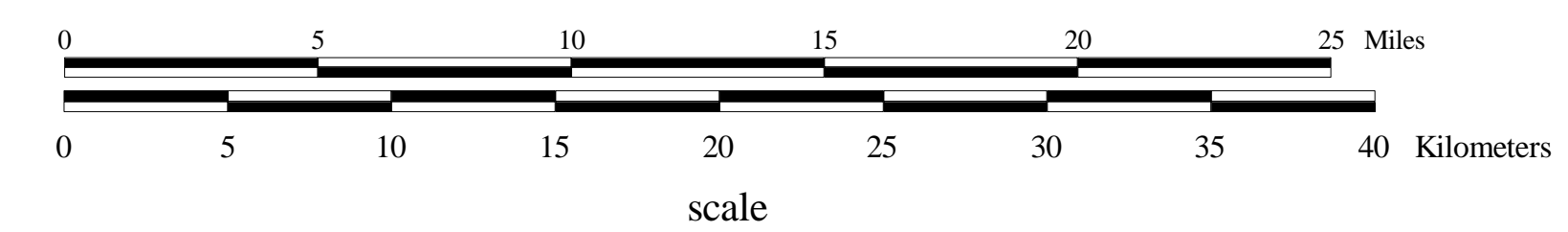
Iowa Geological Survey  
2004



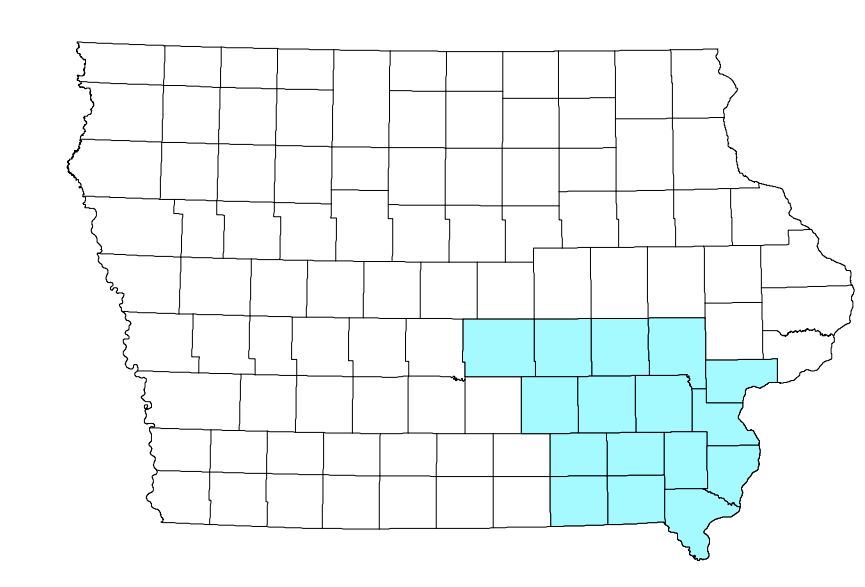
Bedrock Exposures in Southeast Iowa

### LEGEND

- PENNSYLVANIAN**
- Pm** Marmaton Group. Upper Middle Pennsylvanian (upper Desmoinesian). Maximum thickness estimated 75 ft (23 m) in southwest Davis Co. Primary lithologies: shale, light to dark gray; limestone.
  - Pc** Cherokee Group and Caseyville Fm. Lower and Middle Pennsylvanian (Morrowan, Atokan-Desmoinesian). Includes Killoburn, Kalo, Floris, Swede Hollow, Spoon fms.; Caseyville Fm primarily in Muscatine Co. Maximum thickness to 412 ft (126 m) Wapello Co., 230 ft (70 m) Muscatine Co. Primary lithologies: shale, gray, part silty to sandy; sandstone, v-f-m. Secondary lithologies: shale, black mudstone, gray to red; coal. Minor: limestone; coarse sandstone; siderite, pyrite.
- MISSISSIPPIAN**
- Msp** "St. Louis" and Pella formations. Middle Mississippian (Meramecian). Locally includes Sonora Fm in Lee, Van Buren, Henry, Des Moines, and Jefferson counties. Maximum thicknesses vary 45-130 ft (14-40 m); beveled to truncated beneath sub-Pennsylvanian unconformity. Primary lithologies: dolomite, part sandy to fossiliferous; limestone, part sandy to fossiliferous; dolomite/limestone breccia; sandstone; shale, green-gray to pink. Secondary lithologies: oolitic limestone; gray shale. Minor: chert, chalcodony, anhydrite.
  - Mk** Augusta Group. Middle Mississippian (Osagean); upper Warsaw in Lee and Van Buren counties likely ranges into basal Meramecian. Includes Burlington, Keokuk, Warsaw fms. Maximum thickness 200 ft (60 m); locally beveled beneath sub-St. Louis and sub-Pennsylvanian unconformities. Primary lithologies: dolomite, part argillaceous; fossiliferous limestone (especially crinoidal packstone). Secondary lithologies: glauconitic limestone and dolomite; chert, nodular to bedded; shale, gray to green-gray, part silty. Minor: quartz geodes, chalcodony, silicification, siltstone, phosphatic limestone.
  - Mk** Kinderhookian strata. Lower Mississippian (Kinderhookian). Includes Wasonville, Maynes Creek, Prospect Hill, and "McCrane" fms.; thin Gilmore City Fm (upper Kinderhookian-basal Osagean) locally present in Mahaska, Jasper, Poweshiek counties. Maximum thickness 130 ft (40 m) in Lee Co. Primary lithologies: dolomite, part fossiliferous; mixed dolomite/limestone; siltstone, argillaceous. Secondary lithologies: shale, gray to green-gray; fossiliferous limestone, oolitic limestone. Minor: chert.
- DEVONIAN**
- Dk** Famennian interval. Upper Devonian (Famennian). Includes Sheffield, Maple Mill, English River, Saverton, Grassy Creek fms.; upper New Albany and Yellow Spring groups; likely includes Louisiana Fm in southern Lee Co. Maximum thickness 300 ft (90 m). Primary lithologies: gray to green-gray silty shale; laminated brown to brown-black shale; siltstone, argillaceous, part fossiliferous. Minor: phosphatic siltstone; oolitic ironstone; limestone.
  - Di** Lime Creek and Sweedand Creek formations. Upper Devonian (upper Frasnian). Includes "Amana beds" of Iowa Co. Maximum thickness 160 ft (49 m) in Poweshiek Co.; Sweetland Creek Shale <20 ft (6 m) in Louisa, Muscatine counties. Primary lithologies: dolomite, part calcareous to dolomitic. Secondary lithologies: argillaceous dolomite/limestone; siltstone, brown shale; phosphatic siltstone/shale.
  - Dc** Cedar Valley Group. Upper Middle and lower Upper Devonian (upper Givetian-lower Frasnian). Includes Little Cedar, Coraville, Lithograph City fms. Maximum thickness >200 ft (60 m) Poweshiek Co.; 80-130 ft (24-40 m) southward. Primary lithologies: limestone, fossiliferous, locally biostromal, part argillaceous. Secondary lithologies: sublitographic to intraclastic limestone; dolomite, part argillaceous. Minor: shale, sandy limestone, chert, silicification.
  - Dw** Wapignite Group. Middle Devonian (Eifelian-lower Givetian). Includes Otis, Pinicon Ridge fms. Maximum thickness 100 ft (30 m). Primary lithologies: limestone breccia; laminated dolomite; argillaceous to sandy dolomite. Secondary lithologies: sublitographic to intraclastic limestone, part laminated; fossiliferous dolomite to limestone; gray shale, part sandy. Minor: oolitic limestone; chalcodony.
- SILURIAN**
- Sg** Gover Formation. Silurian (Wenlock). Maximum thickness 75 ft (23 m). Primary lithology: laminated dolomite. Secondary lithologies: fossiliferous dolomite (brachiopodal or crinoidal); dolomite mudstone; Minor: chert, intraclastic dolomite.
  - Ss** Scotch Grove Formation. Lower Silurian (upper Llandovery-lower Wenlock). Maximum thickness 190 ft (58 m). Primary lithologies: porous fossiliferous dolomite (crinoidal); cherty to very cherty dense dolomite. Secondary: mounded dolomite facies, fossiliferous. Minor: quartz druse, silicification.
  - Sh** Hopinton Formation. Lower Silurian (Llandovery). Maximum thickness 75 ft (23 m). Primary lithologies: dolomite, fossiliferous to suggy. Secondary: cherty dolomite. Minor: chalcodony, silicification.



- Geologic Contact
- County Line
- Fault Zone  
u = up-thrown block  
d = down-thrown block  
dashed where inferred
- Township Boundary
- Well Data Point
- Major Highways
- River or Creek
- Interstate
- Federal
- State



Index Showing Area of Geologic Map

Prepared under the STATEMAP program, in cooperation with the U.S. Geological Survey, Department of Interior, Supported by Cooperative Agreement 03-HQAG-0087



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