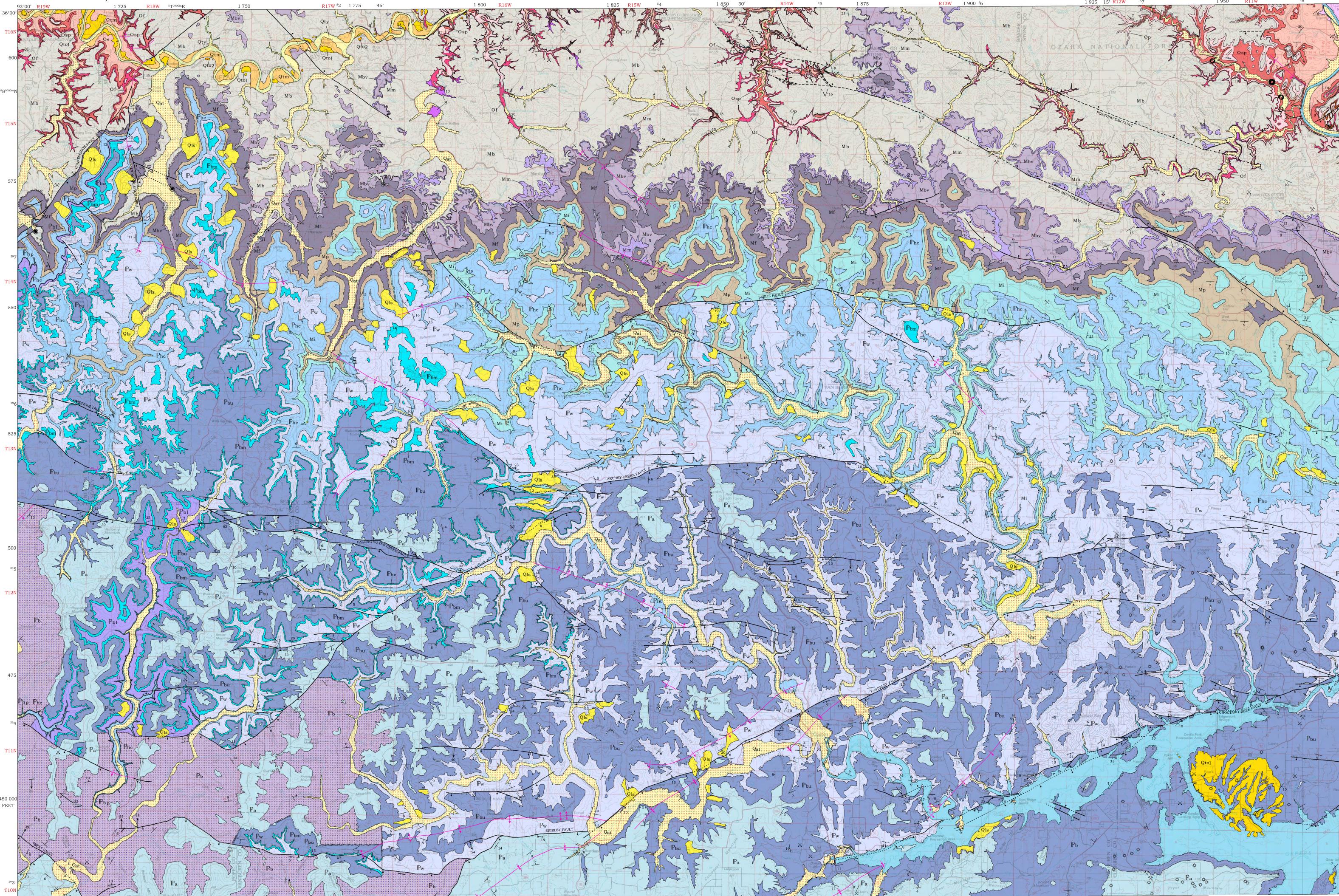
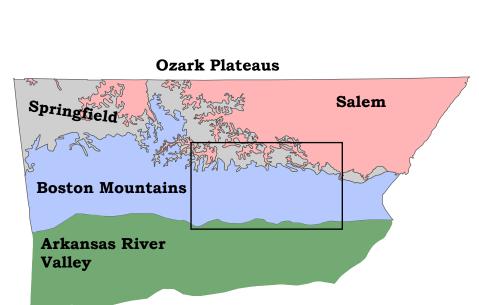


# Compilation Geologic Map of the Mountain View 30' x 60' Quadrangle, Van Buren, Searcy, Stone, Cleburne, Pope, Newton, Izard, and Baxter Counties, Arkansas

Geology by Richard S. Hutto, Angela K. Chandler, Daniel S.Rains, Daniel K. Smith, Erin E. Smart, Scott M. Ausbrooks, Ty C. Johnson, James M. Smith, and Garrett A. Hatzell Compilation by John T. Gist

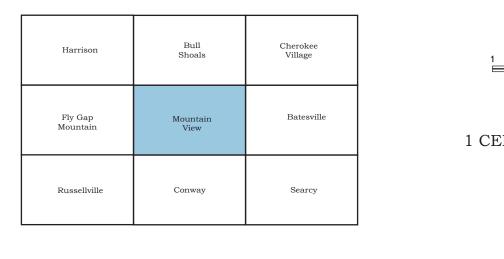


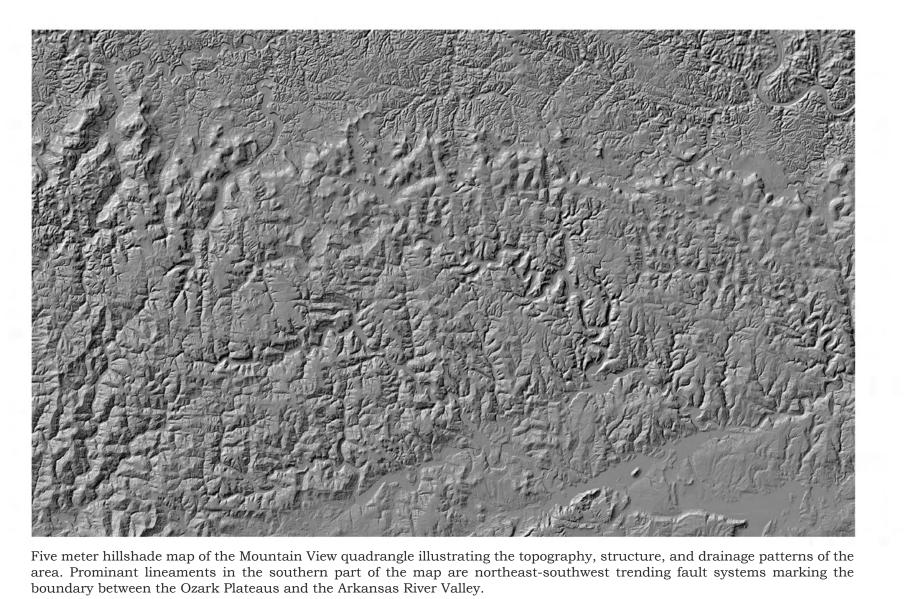


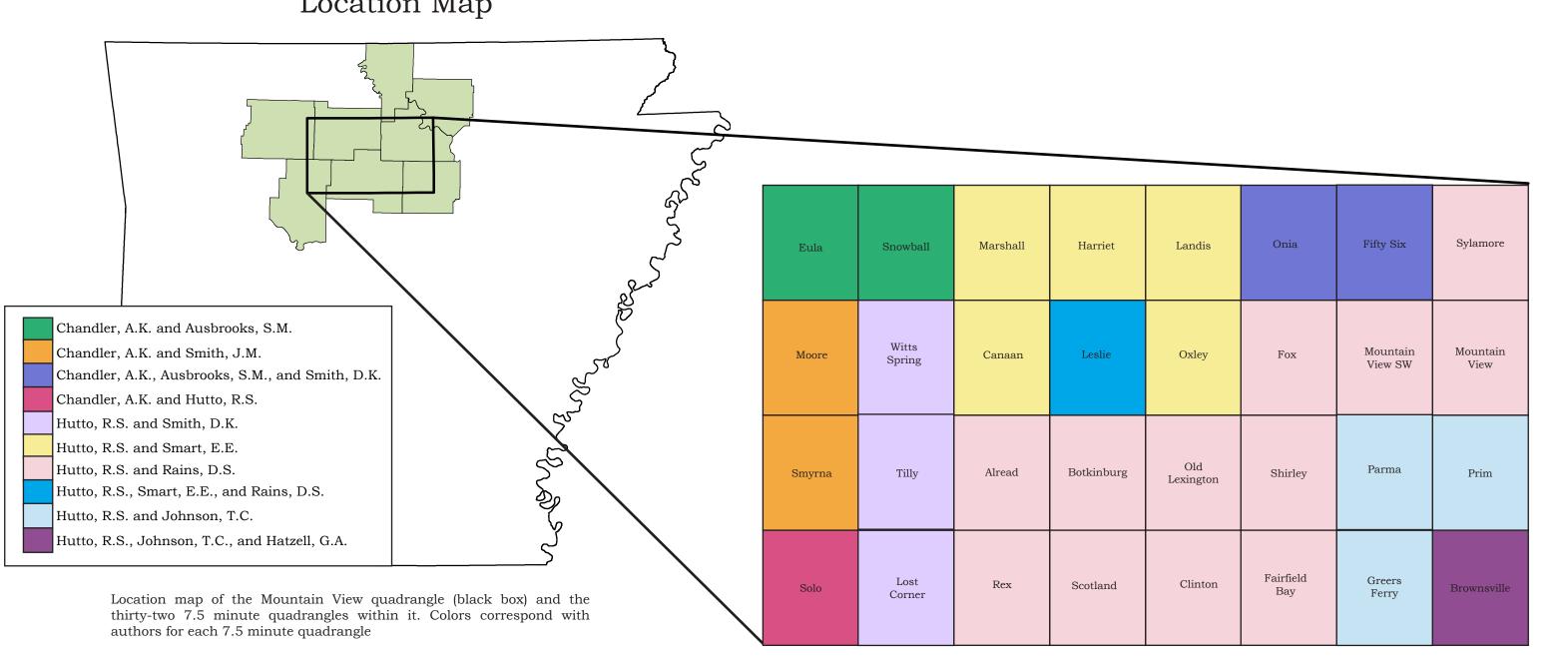


7250 000

Location of the Mountain View 30' x 60' quadrangle in relation to the physiographic provinces of northern Arkansas.







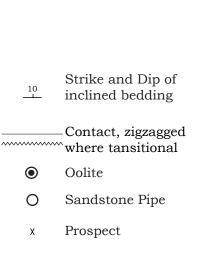
Scott M. Ausbrooks, Director and State Geologist

1 0 1 2 3 4 5 6 7 8 9 10 KILOMETERS CONTOUR INTERVAL 40 METERS 1 CENTIMETER ON THE MAP REPRESENTS 1 KILOMETER ON THE GROUND



Primary highway, hard surface Light duty road, principal street, hard or improved surface —— ----- Other road or street; trail

R12W 1 925 15'

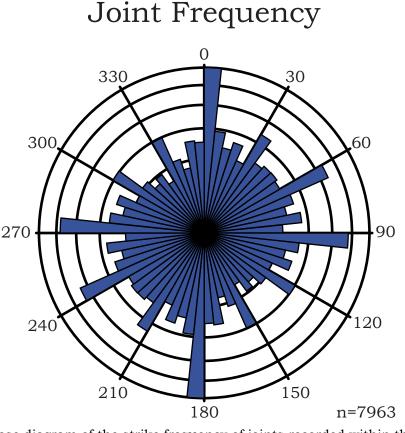


R11W 1 950

Normal Fault downthrown dip direction a. • L plane. Dashed . . . . . . . . **†** . . . . . . Dotted where Anticline Syncline Monocline

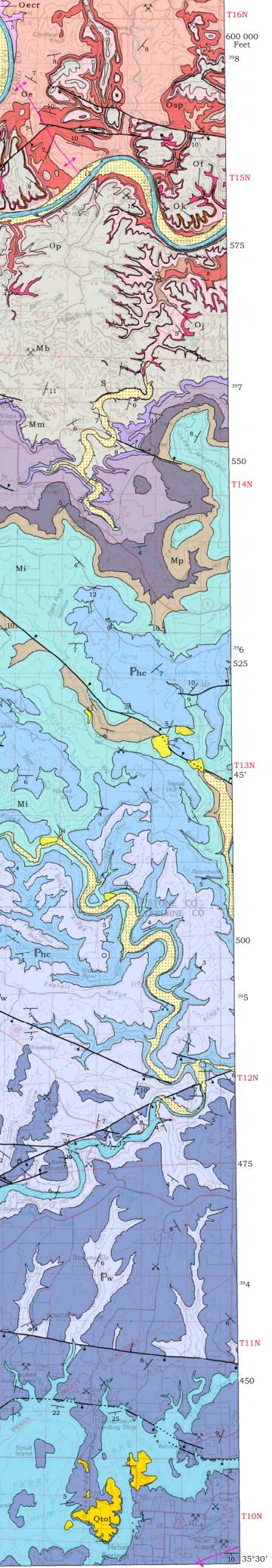
Location Map

1 825 R15W <sup>5</sup>4



Rose diagram of the strike frequency of joints recorded within the Mountain View 30' x 60' quadrangle.

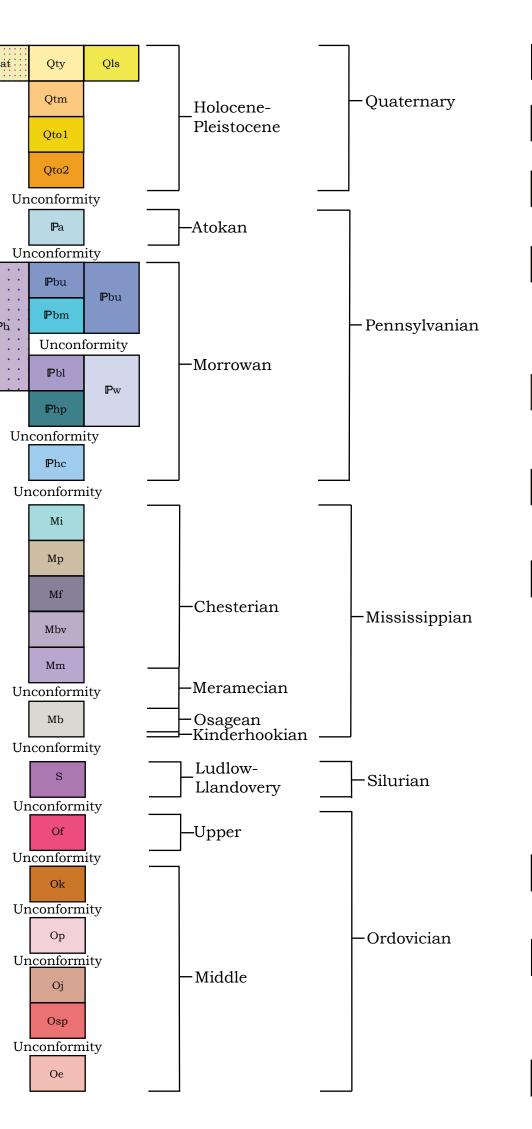
30 X 60 MINUTE SERIES (TOPOGRAPH)



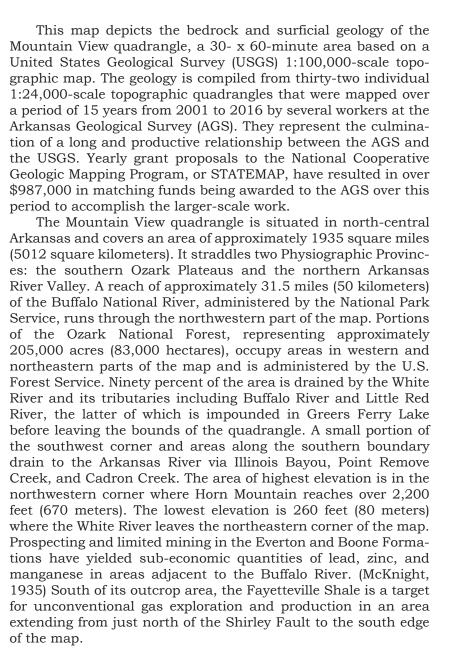
# Map Symbols

| - ball and bar on<br>side. Arrow shows<br>and degree of fault<br>ed where inferred.<br>concealed. | X                                            | Mine, Quarry                          |
|---------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------|
|                                                                                                   | X                                            | Mine, Quarry abandoned                |
|                                                                                                   | $\stackrel{\scriptstyle \leftarrow}{\times}$ | Pit, Sand, gravel, clay               |
|                                                                                                   | ×                                            | Pit, Sand, gravel, clay<br>abandoned  |
|                                                                                                   | ¢                                            | Gas well                              |
|                                                                                                   | ¢                                            | Dry hole                              |
|                                                                                                   | 0                                            | Drill Hole for<br>mineral exploration |
|                                                                                                   |                                              |                                       |

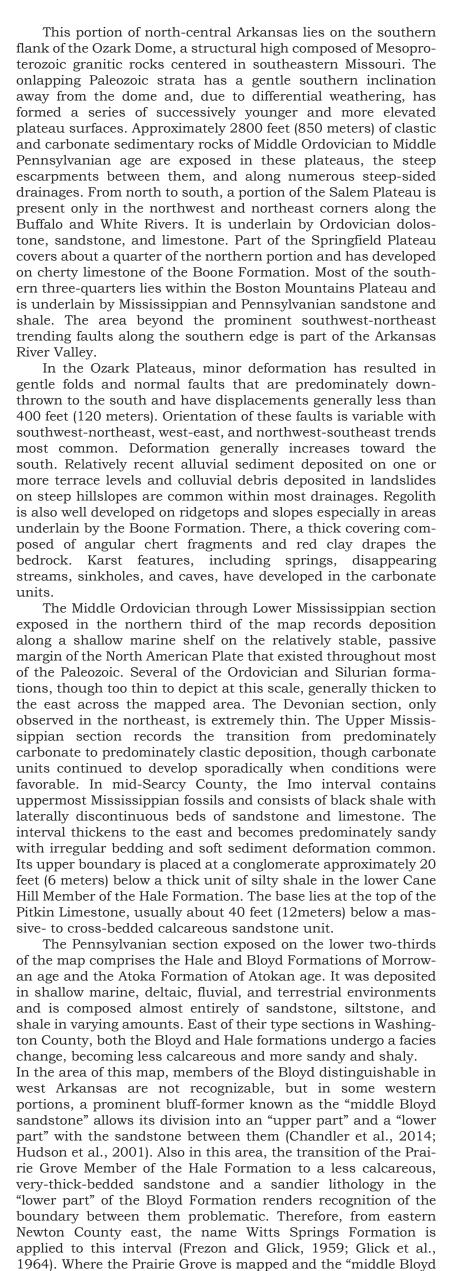
# Correlation of Map Units



#### Introduction



#### Stratigraphic Summary



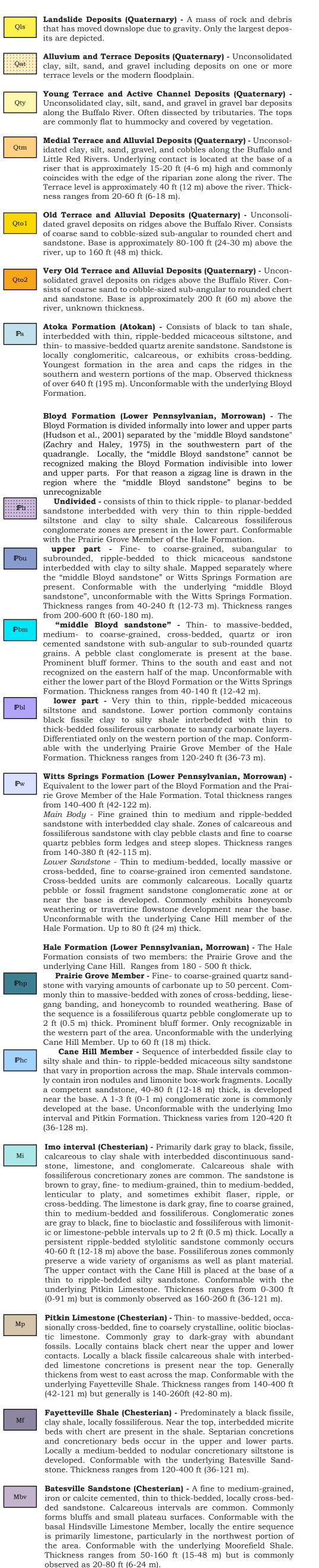
sandstone" cannot be differentiated, the Bloyd is undivided.

Where the Witts Springs is mapped, and the "middle Bloyd sand-

stone" cannot be differentiated, the "upper part" of the Bloyd

overlies the Witts Springs.

## Description of Map Units



Hindsville Limestone Member – Thin- to medium-bedded,

fine to coarsely crystalline limestone with local ripple beds 2-3 ft

(0.5-1 m) across. Commonly fossiliferous or oolitic. A chert and

limestone breccia is developed locally at the base. Conformable

with the underlying Moorefield and unconformable with the

Boone Limestone where the intervening beds are absent. Thick-

zone that is commonly fossiliferous. Thins from east to west and

pinches out in the western part of the area. Unconformable with

the underlying Boone Limestone. Up to 100 ft (30 m) thick.

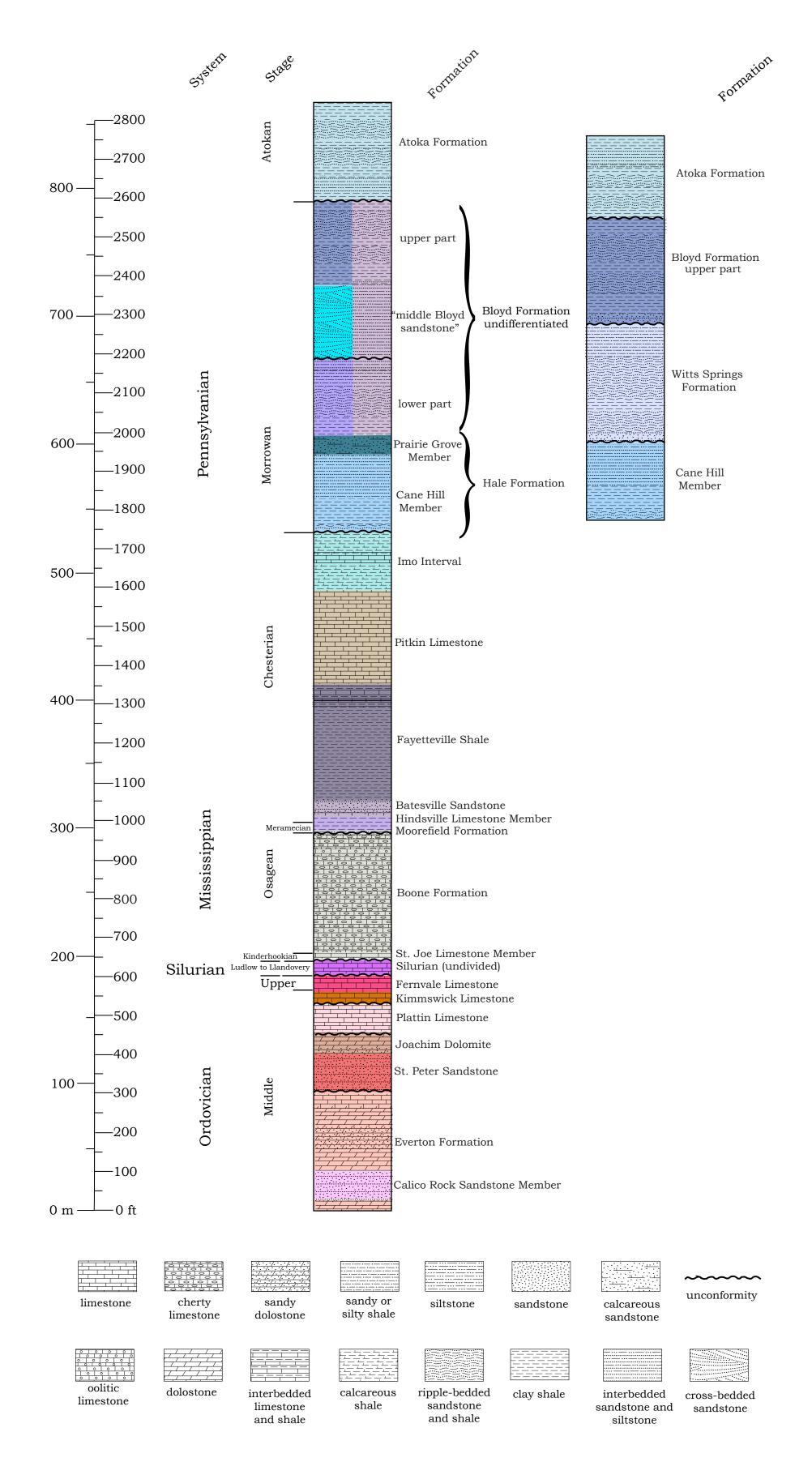
Moorefield Formation (Chesterian and Meramecian) - Silty to

Mm clay shale with interbedded siltstone. A persistent dark medi-

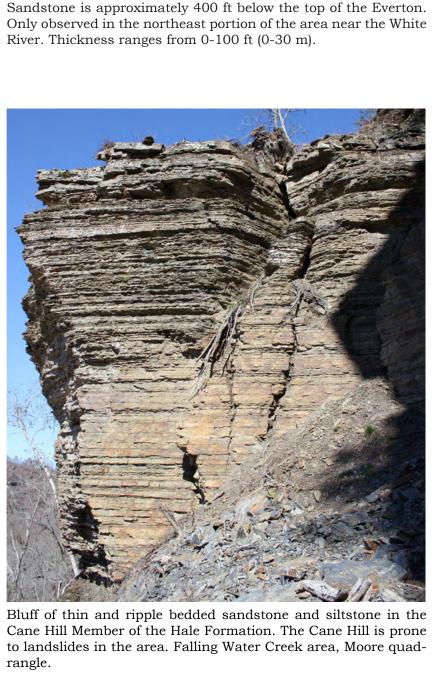
um-crystalline limestone is developed with a basal conglomeratic

ness ranges from 3-10 ft (1-3 m).

Digital Geologic Quadrangle Map



## Stratigraphic Column



Boone Limestone (Meramecian and Osagean) - fine to

mosing or discontinuous chert intervals. Limestone is light to dark-gray. Chert is white to tan and dark gray to black and local-

ly red. Locally an oolitic interval is developed within 75 ft (23 m)

of the top. Upper part of the interval is commonly coarse-grained

with light colored chert. A red-brown regolith composed of residual clay and angular chert covers the surface of the Boone and

underlying formations. Contains abundant karst features

including springs, caves, and sinkholes. Conformable with the

St. Joe Limestone (Osagean and Kinderhookian)- medi-

basal St. Joe Limestone Member but unconformable with older

um-grained, thin bedded bioclastic and crinoidal limestone.

Commonly dark-gray to red. Phosphate pebbles, pyrite nodules,

and manganese zones are locally common. Generally chert free

with small round green clay spheres at the top. Locally a sand-

stone is developed at the base. Unconformable with older units.

Thickness generally ranges from 2-8 ft (0.5-2.5 m) with a maxi-

Chattanooga Shale (Upper Devonian) - fissile clay shale with

thin lenticular sand bodies interbedded locally. Only seen in a

few places on the northeast portion of the map. Unconformable

with the underlying Lafferty Limestone. Thickness ranges from

Sylamore Sandstone Member - medium-grained, moderately

sorted, sub-angular to sub-rounded, friable iron cemented sand-

stone. Weathers to light tan but commonly has a salt and pepper

**Silurian (Undivided) (Ludlow to Llandovery)** - limestone with sporadic outcrop area across the northern quarter of the map.

appearance on a fresh surface. Thickness ranges from 0-1.5 ft

hickest observed outcrops are present in the northeast portion

of the map. Locally the Upper Ordovician Cason Formation has

been mapped with the Silurian due to lack of outcrop and thick-

ness. Unconformity at base of each limestone. (Wise and Caplan,

**Lafferty Limestone** - thin to thick-bedded, finely crystalline to

micritic, stylolitic limestone. Light to medium-gray with small red

to dark pink blebs. Most persistent and thickest unit exposed

St. Clair Limestone - thick-bedded, coarsely crystalline, fossilif-

erous limestone. Color ranges from light gray to light pink-gray.

Brassfield Limestone - thick to massive-bedded, coarse to very

coarse-crystalline, sparsely fossiliferous limestone. Color ranges

from light gray to dark red and pink. Commonly contains calcite

and very fine silt or clay filled vugs. Locally veins of calcite are common. Unconformable with the underlying Cason Formation.

Cason Formation (Upper Ordovician) - consists of various rock

types throughout the outcrop area, however, its most commonly

composed of silty to clay shale that is light blue-green on fresh

surfaces, but weathers medium green-gray. Locally, especially

near the top, contains dark brown to black, irregularly rounded

phosphate pebbles, and silty to nodular limestone. The eastern-

most outcrops consist of interbedded shale with dark red to pale

green calcareous conglomeratic sandstone. Unconformable with

the underlying Fernvale Limestone. Thickness ranges from 0-15

Fernvale Limestone (Upper Ordovician) - medium to mas-

sive-bedded, medium to coarsely crystalline, locally cross-bed-

masses, often lichen or moss covered. Locally abundantly fossilif-

erous. Basal contact is described as a "welded contact" (Craig et.

al, 1975) and unconformable with the underlying Kimmswick or

older strata. Thickens to the east across the northern part of the

map. Thin units above and below, including the Cason Forma-

tion, Kimmswick Limestone, and Plattin Limestone, are mapped

as part of the Fernvale in some areas. Thickness ranges from

Kimmswick Limestone (Middle Ordovician) - fine to medi-

um-grained bioclastic limestone with minor micritic zones, often

stylolitic. Typically light gray to white, weathering to medium or

dark-gray. Weathers into rounded masses but remains very hard

and not friable. Rare phosphate pebbles, chert lenses, and karst

features are noted. Unconformable with the underlying Plattin

Limestone. Very thin and mapped together with the Fernvale

Limestone except for the northeast part of the map where it

thickens. Up to 30 ft (9 m) but generally less than 10 ft (3 m)

Plattin Limestone (Middle Ordovician) - very thin to thick,

flat-bedded dense micritic limestone. Calcite veins and pyrite

clusters are common. A siltstone interval occurs locally at the

top. It is rarely fossiliferous with stromatolites locally developed

at the upper and lower contacts. Karst features such as disap-

pearing streams, caves, springs, and scalloped beds are

common. Basal contact may be conformable in places but has

been interpreted as an angular unconformity with the Joachim

Dolomite. (Craig, 1988) Thickness ranges from 5-150 ft (1.5-45

Joachim Dolomite (Middle Ordovician) - fine grained to finely

crystalline dolostone that commonly contains sand grains near

the base. Contains mudcracks, lamellae, and locally, a breccia

with calcareous sandstone and angular dolostone rip-up clasts.

Karst features include springs, solutioned joints, and sinkholes.

with the overlying Plattin where it is very thin. Thickens from

west to east across the northern portion of the map. Up to 140 ft

St. Peter Sandstone (Middle Ordovician) - fine to medi-

um-grained, well sorted, well rounded, thin to massive-bedded,

locally cross-bedded, calcite cemented, translucent quartz sand-

stone with a sugary texture. Interstitial calcite commonly exhib-

its a poikilotopic texture. Commonly case hardened but friable

when broken. Outcrops commonly form concave or convex bluff

lines and glades. Locally contains trace fossils, sandstone pipes,

caves, springs, and other karst features. Lower contact with the

Everton Formation is unconformable and exhibits relief. Thick-

**Everton Formation (Middle Ordovician)** - very fine to

fine-grained, thin to very thick-bedded, sandy to limy dolostone.

Thin to medium-bedded, fine to medium-grained quartz sand-

stone is commonly interbedded, particularly in the upper part.

Locally hummocky to ripple-bedded and bioturbated, the dolos-

tone can be mottled or banded. Locally contains stromatolites,

Oecr angular to rounded quartz grained sandstone. White to buff on

fresh surfaces, but weathers gray. Thin to massive-bedded.

ranges from a feather edge to 500 ft (0-152 m).

mud-cracks, calcite filled vugs, and glauconite grains. Thickness

Calico Rock Sandstone - calcareous, poorly sorted, sub-

ness ranges from 15-300 ft (5-91 m).

(43 m) thick.

Conformable with the underlying St. Peter Sandstone. Included

ded limestone. Outcrops generally occur as rounded friable

ft (0-4.5 m) but is generally less than 6 ft (1.8 m).

0-80 ft (0-24 m) but is generally 10-20 ft (3-6 m).

throughout the area. Thickness ranges from 0-20 ft (0-6 m).

Exceptionally thin unit, up to 3 ft (1 m) thick.

1988) Thickness ranges from 0-60 ft (0-18 m) but generally less

units. Thickness ranges from 300-400 ft (91-122 m).

mum thickness of 20 ft (6 m).

0-6 ft (0-2 m).

than 20 ft (0-6 m).

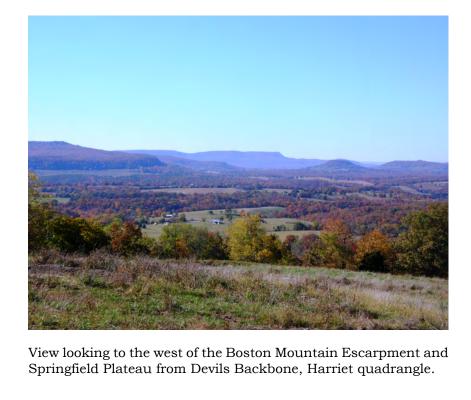
Up to 20 ft (6 m) thick.

(0-0.5 m).

<sup>Mb</sup> coarse-grained or crystalline fossiliferous limestone with anasto-



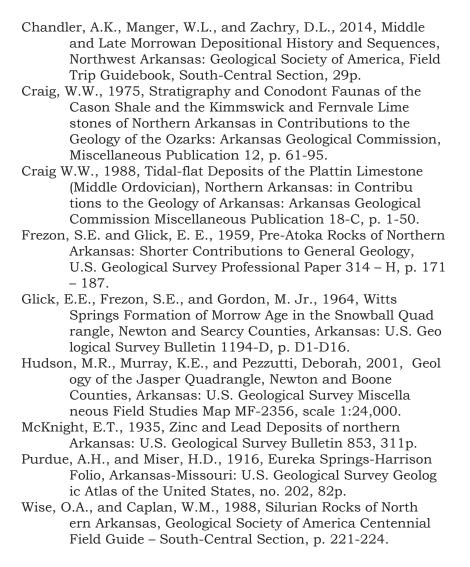
Pitkin Limestone at Twin Falls on Devils Fork Creek, Richland Creek Wilderness Area, Moore Quadrangle.







### References



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Map digitized by Brian Kehner.