

# Widespread effects of middle Mississippian deformation in the Great Basin of western North America

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## Abstract

Stratigraphic analyses in central and eastern Nevada reveal the importance of a deformation event in middle Mississippian time that caused widespread deformation, uplift, and erosion. It occurred between middle Osagean and late Meramecian time and resulted in deposition of both synorogenic and postorogenic sediments. The deformation resulted in east–west shortening, expressed as east–vergent folding and east–directed thrusting; it involved sedimentary rocks of the Antler foredeep as well as strata associated with the Roberts Mountains allochthon. A latest Meramecian to early Chesterian unconformity, with correlative conformable lithofacies changes, postdates this deformation and occurs throughout Nevada. A tectonic highland—created in the middle Mississippian and lasting into the Pennsylvanian and centered in the area west and southwest of Carlin, Nevada—shed sediments eastward across the Antler foreland, burying the unconformity. Post orogenic strata are late Meramecian to early Chesterian at the base and are widespread throughout the Great Basin. The tectonism therefore occurred 20 to 30 m.y. after inception of the Late Devonian Antler orogeny, significantly extending the time span of this orogeny or representing a generally unrecognized orogenic event in the Paleozoic evolution of western North America.

We propose a revised stratigraphic nomenclature for Mississippian strata in Nevada, based on detailed age control and the recognition of unconformities. This approach resolves the ambiguity of some stratigraphic names and emphasizes genetic relationships within the upper Paleozoic section. We take advantage of better stratigraphic understanding to propose two new stratigraphic units for southern and eastern Nevada: the middle Mississippian Gap Wash and Late Mississippian Captain Jack Formations.

[Paleozoic](#) [tectonics](#) [stratigraphy](#) [Antler](#) [foreland](#) [lithostratigraphy](#)

## Footnotes

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[↩](#) GSA Data Repository item 2003139, detailed regional discussion of stratigraphy in Nevada, is available on the Web at <http://www.geosociety.org/pubs/ft2003.htm>. Requests may also be sent to [editing@geosociety.org](mailto:editing@geosociety.org).

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## Articles citing this article

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Geosphere, February 1, 2010, v. 6, p. 1-34

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Field Guides, January 1, 2008, v. 11, p. 21-42

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