

Paper No. 104-21

Presentation Time: 8:00 AM-6:00 PM

NEW BALANCED AND RETRODEFORMABLE CROSS SECTION OF THE NORTHERN CONFUSION RANGE, WEST-CENTRAL UTAH INDICATES AN EAST-VERGENT FOLD-AND-THRUST BELT OF SEVIER AGE

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The northern Confusion Range is located in the Basin and Range of west-central Utah, east of and structurally above the Snake Range metamorphic core complex. The Confusion Range is comprised of Cambrian through Triassic strata, with lower Paleozoic (lPz) units consisting primarily of mechanically strong, thickly-bedded carbonates and upper Paleozoic (uPz) units predominantly weaker shales and sandstones along with thinly bedded carbonates. The northern Confusion Range has previously been interpreted as a structural synclinorium in which gravity slumping resulted in convoluted recumbent folds of the uPz strata, although more recent interpretations have emphasized the role of Mesozoic thrusting. We use existing mapping and new field data to construct a balanced and retrodeformable cross section across the northern Confusion Range and Tule Valley to the eastern margin of the House Range. Our work indicates that the northern Confusion Range is an east-vergent fold-and-thrust belt of Sevier age overprinted by Basin and Range extension.

The eastern border of the Foote Range on the west edge of the Confusion Range is formed by a west-dipping normal fault that cuts the west limb of the Bishop Springs anticline. Drill hole data from the Bishop Springs well on the crest of the anticline imply a series of stacked thrust sheets which repeat lPz strata. This shortening is expressed in the uPz section to the east as an east-vergent detached anticline cored by mechanically incompetent Chainman Shale. Ely Limestone exposed in Chevron Ridge forms the overturned west limb of the adjacent east-verging syncline, which has a gently dipping east limb consisting of Permian and Triassic units that are folded and cut by listric normal faults in the Disappointment Hills.

East of the Confusion Range in the subsurface of Tule Valley and the House Range, Sevier thrusting manifests as large thrust sheets in Precambrian strata. Paleozoic strata are passively folded over the Pavant and Paxton thrust ramps inferred from COCORP Utah Line 1. Tule Valley is likely cut by several concealed normal faults, in addition to those exposed at Coyote Knolls. A west-dipping Tertiary normal fault forms the eastern margin of the House Range and apparently merges with the Canyon Range thrust at depth.

[2010 GSA Denver Annual Meeting \(31 October –3 November 2010\)](#)

[General Information for this Meeting](#)

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