LATE CRETACEOUS (CAMPANIAN) ESTUARINE AND FLUVIAL SYSTEMS ASSOCIATED WITH RAPID SUBSIDENCE, NORTHWESTERN COLORADO

K. NELSON and A.J. SCOTT
Department of Geological Sciences, University of Texas
P.O. Box 7009, Austin, Texas 78712

Exposures of the Mesaverde Group in extreme northwestern Colorado record the evolution from estuarine to fluvial channels formed along the western margin of the Cretaceous Western Interior Seaway. Thin (0.2 - 2 m) bioturbated, root-mottled, fine sandstones are interbedded with siltstones near the base of the unit. Overlying these storm washover deposits are carbonaceous siltstones which encase lenticular sandstones. In the eastern portion of the study area, very fine sandstone lenses (4-8 m thick) have erosional bases and lateral accretion bounding surfaces. *Ophiomorpha* and other trace fossils suggest these sandstones formed along meandering tidal creeks.

Stratigraphically higher, fine sandstones form broad belts. Erosional bases, prominent lateral-accretion surfaces and succession of sedimentary structures indicate fluvial point bar deposition. These multi-lateral meander-belt deposits are overlain by multi-storied, narrower lenses lacking accretionary surfaces and flanked by extensive crevasse splay facies. These fine to medium sandstones (10 - 22 m thick) are interpreted as anastomosing fluvial channels. To the west the anastomosing fluvial system directly overlies shoreface deposits.

These sequences represent aggradation of channel deposits associated with rapid subsidence. In the west aggraded fluvial systems formed inland from the coast. To the east lower stream reaches were tidally-influenced as sedimentation kept pace with subsidence.

Memoir 9 (1984)