



DESCRIPTION OF MAP UNITS
SEDIMENTARY DEPOSITS
Sedimentary deposits of northern Death Valley include units of alluvial, eolian, lacustrine, and spring origin. The alluvial deposits, which include both fan and pediment deposits, predominate. Fan deposits are divided into four major units, locally one of these is further divided into three subunits. Pediment deposits may be divided into two subunits. Hypsometric map symbols (for example, Qf1a) are used where two deposits cannot be separated at the map scale; symbols separated by a slash indicate areas where thin veneers of younger deposits overlie older deposits (for example, Qf1/Qf2).
Age differentiation of alluvial units is based on a variety of morphological characteristics including morphostratigraphic relations, preservation of constructional forms, depth of incision, development of desert pavements, intensity of faulting, and rounding of pebbles adjacent to alluvium. Clasts that make up the alluvial deposits reflect the bedrock lithologies of individual drainage sources. In northern Death Valley, these deposits are composed of three general lithologies: (1) Jurassic granitic rocks from the Sullivan Mountains in the extreme northern end of valley; (2) Miocene siliceous welded tuff from the northern part of the Grapevine Mountains; and (3) Paleozoic carbonate rocks with subordinate quartzite from the Last Chance Range and the southwestern flank of the Grapevine Mountains. These differences partly control soil development and degradation of lithologic constructional forms through time. Argillitic soil horizons develop on granitic constructional forms through time. Argillitic soil horizons develop on granitic alluvium, whereas alluvium consisting of either tuff or carbonate clasts lacks soils with well-developed argillitic horizons but supports development of calcic horizons. On older surfaces, well-developed calcic horizons retard degradation.
Distinguishing fans from pediments is difficult because their surface morphologies and lithologies are similar and younger fans may cover older pediments. Extensive areas of low relief in the northeastern part of the study area are mapped as a pediment complex veneered with fans. This interpretation is based on the following lines of evidence: (1) numerous lineaments are present near the mountain front; (2) deformed Tertiary rocks crop out in arroyos; (3) lineaments and color banding on aerial photographs suggestive of small fault blocks eroded to coplanar surfaces; and (4) absence of a notable gravity anomaly (Roberts and others, 1961) suggests the absence of deep valley fill.
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