39°00'00" R24E R25E 39°00'00"

119°15'00" 119°07'30"

T13N T12N

38°52'30" R24E R25E 38°52'30"

Piedmont Alluvium

Qa **Undifferentiated piedmont surficial deposits (Holocene and Pleistocene)** Alluvium, colluvium, and eolian deposits variously composed of silt, sand, and gravel.

Qay **Undifferentiated young piedmont alluvium (Holocene and late Pleistocene(?))** Includes broad areas containing various-age deposits of sand, gravel, and boulders. Extent of individual deposits of distinct age and surface properties are too small or irregular to map meaningfully.

Qay_1 **Alluvium of active channels and alluvial fans (modern and late Holocene)** Deposits ranging in composition from fine sand to medium boulders associated with ephemeral stream flow and debris flows. Surface morphology characterized by pristine channels, gravel bars, and bouldery debris flow lobes in confined channels and on broad alluvial fan surfaces. This unit is predominantly associated with historical debris flows on the Singatse piedmont below McConnell Canyon, Western Nevada Canyon, and Sand Canyon. This unit has no significant soil development.

Qay_2 **Alluvium of intermittently active and recently abandoned channels and alluvial fans (late and middle Holocene)** Composition ranges from fine sand to medium boulders. Surface morphology characterized by subdued bar-and-channel to bar-and-swale texture. Minor varnish present on susceptible clasts, but minor to no significant soil development.

Qay_3 **Alluvium of younger abandoned alluvial fan surfaces (middle Holocene to late Pleistocene(?))** Composition ranges from fine sand to small boulders. Surface morphology varies from extremely subdued bar-and-swale to planar form. Soil profiles characterized by well developed Av horizons (5-10 cm), distinct reddened Bw horizons, and thin Bk horizons with Stage 1-2 carbonate morphology.

Qai **Alluvial deposits of intermediate-age, abandoned alluvial fans (late(?) Pleistocene)** Composition ranges from sand to boulders. Surface morphology ranges from moderately to deeply incised. Ridge-and-ravine topography is common. On relict surfaces, soils have moderate to strong Bt horizon and well-developed Bk horizons with Stage 3 carbonate morphology.

Qai_b **Bouldery alluvial deposits of intermediate-age, abandoned alluvial fans (late(?) Pleistocene)** Distinctly boulder-rich alluvial fan deposits found only in the southwest portion of the quadrangle. Surface characterized by distinct, low ridges composed of imbricated cobbles and boulders. Often present as a thin veneer (1-2 m) overlying bedrock in upper fan areas.

Qao **Older, abandoned alluvial fans (middle(?) Pleistocene)** Alluvial deposits of older, abandoned alluvial fans. Often overlain by thick eolian deposits in fanhead and upper fan areas. Medial and distal portions of fan surfaces characterized by ridge-and-ravine topography and deeply incised channels locally. Soil development on most well-preserved surfaces is characterized by strong Stage 3 to Stage 4 carbonate morphology. These deposits form a variably thick (1-10 m) mantle of alluvium and eolian sediments over an irregular bedrock surface in mountain front embayments along the east side of the Singatse Range. However, they are less extensively and conspicuously associated with pediment surfaces than similar deposits in the southwest corner of the quadrangle (unit Qao_p).

Qao_p **Older alluvial deposits overlying pediment surfaces (middle(?) Pleistocene)** Thin veneers of older alluvium on irregular bedrock pediments. Thickness ranges from 1 to as much as 10 m. Irregular bedrock outcrops are common at surface and widespread in slopes along incised channels. The bedrock-alluvium contact is difficult to define and is an approximation as mapped. This deposit and landform association is most common in the southwest part of the quadrangle. On the east side of the range, it is associated with thin patches of alluvium on the footwall of the range front fault. Soils are poorly exposed and presumably degraded. Locally, chips of laminar, Stage 4 soil carbonate are on the surface. This unit is presumably correlative to Qao, but may include older deposits and landforms. A similar unit was mapped and subdivided further by Stewart and Dohrenwend (1984).

Qls **Intermediate-age landslide deposit (late(?) Pleistocene)** Chaotic mass of angular basalt boulders and gravel below southern edge of Black Mountain in southwest part of quadrangle (see also Stewart and Dohrenwend, 1984). Forms irregular, hummocky topography in steep terrain. Mixed with and overlapped by deposits of angular, basaltic colluvium. Position in landscape and degree of erosion/incision suggests Pleistocene age.

Alluvium of the Walker River and its Main Branches

Qfm **Undifferentiated floodplain and meander belt deposits of the Walker River (modern and Holocene)** Fine-grained alluvium ranging from vertical accretion deposits of mud and sand to lateral accretion deposits of sand and gravel. Organic-rich muds are common at the surface. Surface topography is generally planar. Portions are covered by thin (up to 10 cm) veneer of eolian silt.

Qf_1 **Most frequently active floodplain of the Walker River (modern and late Holocene)** Fine-grained alluvial deposits. Composition ranges from vertically accreted organic-rich mud to sand. Largely obscured by extensive agricultural development. Surface topography is planar.

Qf_2 **Infrequently active and abandoned floodplain of the Walker River (late and middle Holocene)** Fine-grained alluvial deposits similar to Qf_1, but typically overlain by eolian silt. Composition ranges from organic-rich mud to sand and gravel. Often overlain by a veneer of eolian silt. Only exposed in isolated areas not subject to agricultural development. Surface topography is planar.

Qm_1 **Active meander belts of the Walker River (modern and late Holocene)** Composition ranges from lateral accretion deposits of sand and gravel to vertical accretion deposits of mud and sand. Surface topography is irregular and includes abandoned, overprinted sinuous channel courses and relict planar floodplain surface remnants.

Qm_2 **Abandoned, young meander belts of the Walker River (historical and late Holocene)** Compositionally and morphologically similar to Qm_1. Distinction of unit defined by cross-cutting relation with Qm_1 and disconnection from active meander belt. Unit is likely to include abandoned meander belts of various ages. Typically obscured by agricultural development. Meander scars and point bar scrolls discernible in aerial photographs, but many portions of the deposit surface are planar due to anthropogenic modification and slight burial by overbank sedimentation. Portions of this unit may be related to channel realignment efforts in the historical period.

Eolian Deposits

Qe **Eolian deposits (Holocene and late Pleistocene(?))** Eolian deposits of fine to medium sand. Extensive planar sand sheets and local, irregular dunes on middle and upper piedmont slopes and thick, irregular hanging dunes in interior niches of the Singatse range. Thickness ranges from 1 m up to 10 m locally.

Qae **Undifferentiated (mixed) alluvial and eolian deposits (Holocene and late Pleistocene)** This unit indicates areas in the quadrangle where discerning distinct eolian and alluvial deposits is difficult and the eolian mantle predominates. This unit is characteristic of piedmont slopes on the eastern edge of the Walker River floodplain.

Miscellaneous

Qx **Disturbed areas (modern to historical)** Areas of significant disturbance or burial of surficial deposits by mineral-resource extraction and related activities.

Bedrock

br **Undifferentiated bedrock (Cenozoic to Paleozoic)** Multiple bedrock units juxtaposed in structural arrangements of varying complexity. See Proffett and Dilles (1985) for a detailed map of bedrock units in most of this quadrangle.

References

Proffett, J.M., and Dilles, J.H., 1984 Geologic map of the Yerington district, Nevada: Nevada Bureau of Mines and Geology Map 77, 1:24,000.

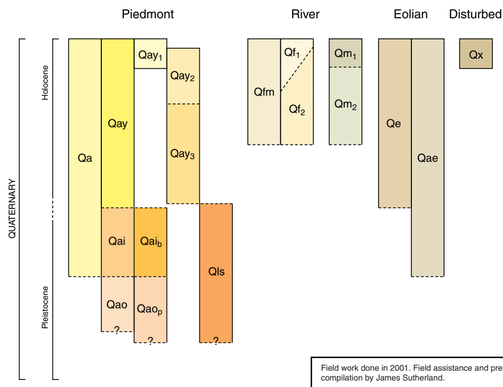
Stewart, J.H., and Dohrenwend, J.C., 1984, Geologic map of the Yerington Quadrangle, Nevada: U.S. Geological Survey Open-File Report 84-212, 1:62,500.

Lithologic contact Dashed where inferred or approximately located.

Normal fault Ball on downthrown side; dashed where inferred or approximately located; dotted where concealed.

Meander trace Discernible through floodplain cover.

Stipple pattern indicates areas of significant disturbance due to agricultural, residential, commercial, or industrial development.



Scale 1:24,000

0 0.5 1 kilometer

0 0.5 1 mile

0 1000 2000 3000 4000 5000 feet

CONTOUR INTERVAL 40 FEET
Supplemental contour interval 20 feet

Base map: U.S. Geological Survey Yerington 7.5' Quadrangle, 1986 Digital Raster Graphic (DRG)

Field work done in 2001. Field assistance and preliminary map compilation by James Sutherland.

DRAFT

Preliminary geologic map.
Has not undergone office or field review.
May be revised before publication.

First Edition, first printing 2001
Printed by Nevada Bureau of Mines and Geology (f:\254yerington\11-13-01.ai)
Edited by
Cartography by Robert Chaney

The geologic mapping was supported by the U.S. Geological Survey STATEMAP Program (Agreement No. 00-HQ-AG-0048).

Nevada Bureau of Mines and Geology
University of Nevada, Mail Stop 178
Reno, Nevada 89557-0088
(775) 784-6691, ext. 2
www.nbmg.unr.edu; nbmgsales@unr.edu

PRELIMINARY QUATERNARY GEOLOGIC MAP OF THE YERINGTON QUADRANGLE, LYON COUNTY, NEVADA

P. Kyle House

2001