



**MAP EXPLANATION**

<b>Quaternary Sediments:</b>	<b>MAP UNITS</b>	<b>SYMBOL EXPLANATION</b>
Qs: Areas underlain by Quaternary sediments that may contain alluvial fans.	Interstate	Major City
Qs: Areas underlain by Quaternary sediments in topographically low areas including playa lakes and coastal lowlands; some areas may consist of the distal portion of alluvial fans.	US Highways	City
<b>Uplands:</b>	Major State Highways	
U: Areas consisting of bedrock or topographic relief including mountainous or uplifted areas.	State Highways	
<b>Water:</b>	County Boundary	
Water		

**EXPLANATION**

The Department of Conservation's California Geological Survey (CGS) has developed for the Department of Water Resources (DWR) and the Alluvial Fan Task Force (AFTF) a GIS relational database and associated maps for use as screening tools under the AFTF work product entitled, "The Integrated Approach for Sustainable Development on Alluvial Fans (Integrated Approach)". The Integrated Approach provides a suite of screening tools intended for use by land owners, developers, planners, regulators, and the public to assist in screening sites to identify the presence of hazards and benefits associated with individual alluvial fan sites prior to project design. The Alluvial Fan (AF) screening tools are designed to identify the general distribution of alluvial fans (AF1) and assess their relative hazard to alluvial fan flooding (AF2) for areas where existing information is unavailable.

This Simplified Map of Areas That May Include Alluvial Fans displays the general distribution of areas in the 10 Southern California counties underlain by Quaternary age (less than two million years old) sediments (Qs) and those areas considered to be Upland (areas consisting of bedrock or exhibiting topographic relief such as hills and mountains). The Quaternary age sediments are subdivided into: Qs areas that may contain alluvial fans, and Qs, topographically low areas including playa lakes and coastal lowlands. Given the gradational nature of the transition between the distal portion of an alluvial fan and an alluvial plain or a playa lake, areas within the Qs category may include the distal portion of alluvial fans. In addition to the GIS database and 1:500,000 scale PDF map (both on an aerial and a digital elevation model hillshade base), data from the simplified map is presented in PDF format at the 1:250,000 scale on 11" x 17" regional advisory maps for each 30' x 60' quadrangle in the 10 county area of southern California.

Existing published surficial geologic map data from the CGS and the U.S. Geological Survey (USGS) were used where available in digital form, and where the level of detail was adequate to assemble this database. The method used for this compilation is described in CGS Special Report 217 (Bedrossian, Rogers, and Hayhurst, 2010). For areas where there are no published maps, engineering geologists from CGS interpreted the boundaries of Quaternary sedimentary deposits using digital raster data, and manually digitized these boundaries. The polygons representing Quaternary sediments were then integrated with the published information. Due to the scale of the GIS database and associated maps, Qs and Upland polygons less than 40 acres in area are not represented.

**DATA LIMITATIONS**

The Simplified Map of Areas That May Include Alluvial Fans is intended to provide information on the general distribution of alluvial fan deposits in the 10 Southern California counties specifically for the AFTF Integrated Approach process (AF1), and is not intended for unrelated uses. Representation of the data set, either digital, or on paper, should not exceed, or show finer detail than, a scale of 1:100,000 (1-inch equals about 1 1/2 miles).

The database and associated maps do not replace Federal Emergency Management Agency (FEMA) maps or guidelines for determining if a site is located on an alluvial fan, and do not differentiate "active" from "inactive" alluvial fan surfaces per FEMA Guidelines and Specifications for Mapping Partners - Appendix G (FEMA, 2003).

Additionally, the database and maps are compiled from many data sources in the processes of compiling published geologic data mapped under different surficial geologic nomenclatures, it was found that while one group of mappers differentiated fan deposits from valley alluvium, others did not. Because of this, it was necessary to combine valley alluvium with fan deposits, resulting in the incorporation of alluvium that is either isolated, or within canyons far beyond areas commonly considered as the topographic apex of a fan. The advantage of incorporating these alluvial units is that smaller "side canyon" type alluvial fans are included in the data. Therefore, depending on the location and data source, the data may show the Qs polygon cut off at the mountain front, as is consistent with the manual digitizing of some of the maps, or the Qs polygon extending deep into the mountain range, as is consistent with polygon areas resulting from CGS compilation mapping.

Lastly, because of the vast differences in nomenclature in the source data, and the compounding effect of using both a digital compilation, and manual digitizing, the final product is not a geologic map, and does not conform to any specific geologic mapping nomenclature, or the North American Stratigraphic Code.

**REFERENCES**

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U.S. Geological Survey, 7.5 Topographic Quadrangle Maps (where available).

U.S. Department of Agriculture, Farm Service Agency-Aerial Photography Field Office, National Agriculture Imagery Program (NAIP), 2006c, color infrared, 1-meter resolution.

Projection: Universal Transverse Mercator, Zone 11 North, North American Datum of 1983.

Shaded topographic relief derived from USGS 1 arc second NED. Base map of geographic names from USGS Geographic Names.

SCALE: 1:500,000

# SIMPLIFIED MAP OF AREAS THAT MAY INCLUDE ALLUVIAL FANS

Prepared by the California Geological Survey for the Department of Water Resources

June 2012

[www.conservation.ca.gov/cgcs](http://www.conservation.ca.gov/cgcs)

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