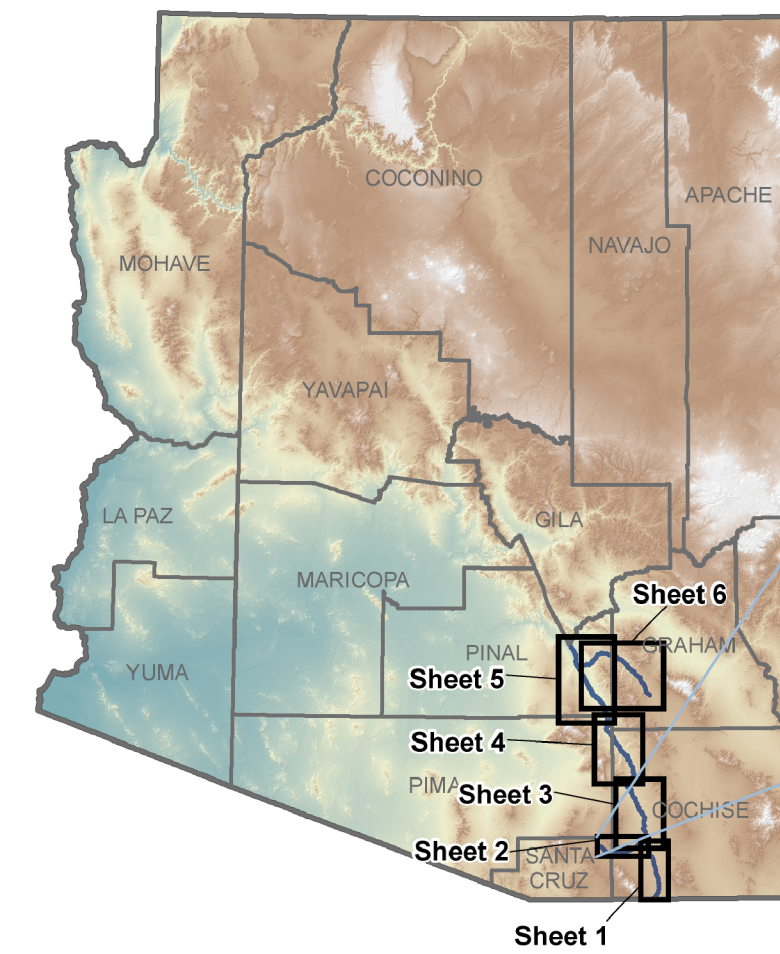


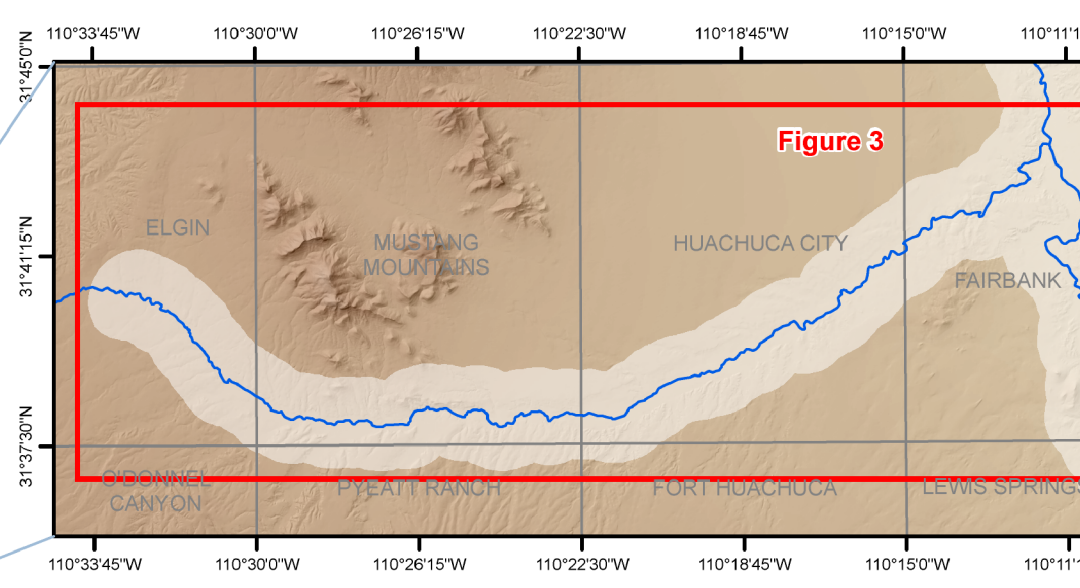
Statewide Location Map

Location of each sheet shown in black



Figures on this Sheet

Figure locations shown in red



# Geologic Map of the San Pedro River, Babocomari River and Aravaipa Creek Corridors, Southeastern Arizona

by  
Ann Youberg, Philip A. Pearthree, Joseph P. Cook, Erica R. Bigio

October 2009  
Digital Map DM-RM-1B, version 1.1

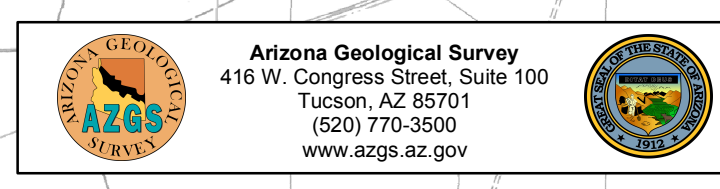
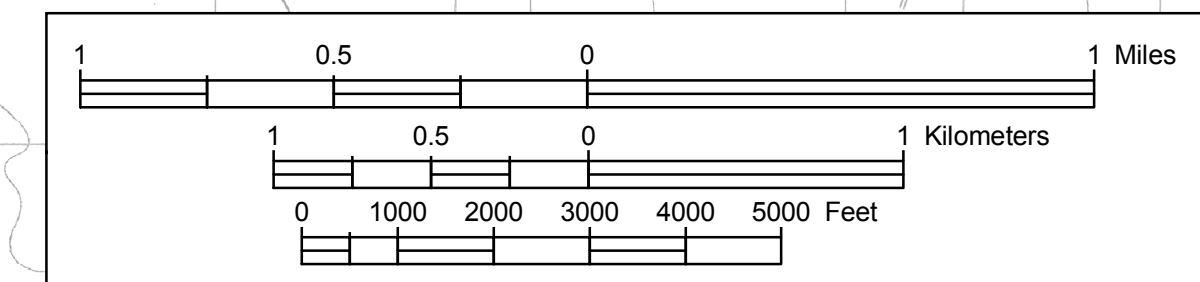
Funding for this project was provided by the Arizona Department of Water Resources

USGS 24k quadrangle series topographic base maps. North American Datum of 1983. Projection and 1000-meter grid ticks (blue): Universal Transverse Mercator, zone 12.

### Bedrock and surficial geologic mapping for areas outside the lateral limits of Holocene river alluvium was compiled from the following sources

Ferguson, C.A., Shipman, T.C., Pearthree, P.A., Moore, E.M., Richard, S.M., Spencer, J.E., Youberg, A., Cook, J.P., and Hadstad, D.E., 2009. Geologic map of the Fairbank 7½ Quadrangle, Cochise County, Arizona. Arizona Geological Survey Digital Geologic Map 50 (DGM-50), v. 2.0, 1 sheet, layout scale 1:24,000, with text.

Pearthree, P.A., and Youberg, A., 2009. Geologic Map of the Huachuca City 7½ Quadrangle, Cochise County, Arizona. Arizona Geological Survey Digital Geologic Map 36 (DGM-36) version 2.0, 1 sheet, layout scale 1:24,000, with text.



### Map Unit Descriptions

Other units		Tertiary basin fill alluvium	
Qd	Disturbed ground - heavily disturbed ground due to agriculture, extensive excavation, or construction of earth dams	Qta	Late Pliocene to early Pleistocene fan gravel - coarse, moderately to well-consolidated gravelly deposits capping high rounded ridges
Qp	Plowed areas - historically or actively plowed fields, irrigated pastures, and other lightly disturbed ground	Qtbl	Early Pleistocene fine-grained basin-floor alluvium - very old, relatively flat basin floor deposits
Qc	Quaternary hillslope talus and colluvium - weakly bedded hillslope deposits mantling the middle and lower slopes of bedrock hills	Qtsd	Pliocene to early Pleistocene Saint David Formation - fine-grained, highly eroded basin-fill deposits
Qv	Active river channel deposits - unconsolidated, very poorly sorted sandy to cobbly beds in active river channels	Qtr	Pliocene to middle Miocene deposits - moderately to strongly indurated conglomerate and sandstone basin fill deposits
Qvt	Flood channel and low terrace deposits - unconsolidated sand, gravel and silt deposits in low terraces and flood channels	<b>Bedrock</b>	
Qvtl	Historical river terrace deposits - unconsolidated sand, gravel and silt deposits on low terraces that below the abandoned early historical floodplain	Tg	Conglomerate - tan, thin- to medium bedded, pebble-cobble, sandy matrix conglomerate and pebbly sandstone
Qvtr	Latest Holocene to historical river terrace deposits - silt, clay, sand and minor gravel deposits underlying the early historical floodplain	Tc	Sandstones and conglomerates - reddish mudstones and sandstones to tan sandstones and conglomerates
Qvtr	Late to early Holocene river terrace deposits - silt, clay, sand and minor gravel terrace deposits slightly above the early historical floodplain	Tgm	Mafic dikes - mafic dikes within or adjacent to older deformed gravels, Tg
Qvtr	Late Pleistocene river terrace deposits - gravely, sandy river terrace deposits up to 25 m above the active river channel	Kd	Porphyry of Fairbank - phenocryst-rich porphyry
Qvtr	Middle to late Pleistocene river terrace deposits - older, higher gravely, sandy river terrace deposits	Ku	Uncle Sam Tuff - phenocryst-rich ash-flow tuff
Qvtr	Early to middle Pleistocene river terrace deposits - oldest, highest preserved gravely, sandy river terrace deposits	Kka	Uncle Sam Tuff megabreccia - zones of megabreccia within the Uncle Sam Tuff
Qvtr	Early Pleistocene river terrace deposits - very high remnant river terrace deposits located 30 to 40 m above the active channel emanating from Babocomari Wash	Kka	Uncle Sam Tuff andesite megabreccia - zones of monofitic, andesite lava megabreccia within the Uncle Sam Tuff
<b>Piedmont alluvium and surficial deposits</b>		Kka	Coarse-grained andesite - volcanic complex dominated by coarse-grained, phenocryst-rich andesite lava and probable hypabyssal bodies
Qy	Modern stream channel deposits - active channel deposits composed of very poorly sorted sand, pebbles, and cobbles with some boulders to moderately sorted sand and cobbles	Kk	Tuff of Charleston - rhyolite ash-flow tuff
Qy	Latest Holocene alluvium - unconsolidated, very poorly sorted silt to cobbly low terrace and overflow channel deposits	Kp	Aphyric rhyolite - aphyric to very phenocryst-poor rhyolite lava with probable zones of hypabyssal rock, and tuff breccia
Qytl	Late Holocene alluvium, active fan deposits - active portions of young fan deposits exhibiting distributary drainage patterns	Ka	Andesite - amalgamated, andesite lava flows intruded by a myriad of dikes
Qy	Late Holocene alluvium - planar terrace deposits located along incised drainages, broad low-relief distal fan deposits overlapping onto Holocene river alluvium, and infrequently active tributary drainage deposits	Kj	Bisbee Group - complexly intertonguing sequences of sandstone, mudstone, shale, and conglomerate
Qy	Older Holocene alluvium - lowest, low-relief, undulating fan deposits exhibiting widespread, shallow branched drainage patterns	Jm	Volcanic and sedimentary rocks of Mustang Mountain - siliceous flows and minor welded tuff
Qy	Holocene alluvial deposits, undifferentiated	Jms	Volcanic and sedimentary rocks of Mustang Mountain - conglomerate, sandstone, siltstone, mudstone, and volcanic rocks
Qys	Holocene fine-grained deposits - unconsolidated alluvium derived predominantly from basin fill deposits	Pcn	Concha limestone - light gray relatively thick-bedded limestone with abundant distinctive chert nodules
Qy	Holocene and Pleistocene alluvium - mixed fine-grained Holocene (Qy) and Pleistocene (Qz or Qz) alluvium	Ps	Scherrer Formation - quartzose sandstone and dolomite
Qz	Late Pleistocene alluvial fan and terrace deposits - weakly consolidated sandy gravel deposits with moderate soil development	Pt	Epitaph dolomite - dolomite and limestone, marl, siltstone, and gypsum
Qz	Middle to late Pleistocene alluvial fan and terrace deposits - weakly consolidated sandy gravel deposits with strong soil development	Pc	Colina limestone - medium to dark-gray limestone
Qz	Early to middle Pleistocene alluvial fan and terrace deposits - high, moderately consolidated gravely deposits with strong soil development		
Qz	Early Pleistocene alluvial fan deposits - highest standing Pleistocene alluvial surface in the landscape composed of moderately consolidated gravely deposits with variable soil development		

### Boundaries of Holocene River Alluvium

**Thin, Solid Line**  
Clearly defined, accurately located contacts between Holocene river alluvium and bounding geologic units such as bedrock hillslopes, sharply incised channels or alluvial terraces, and distinct edges of small, steep alluvial fans and talus slopes. Line location accurate to within 50 feet.

**Thin, Dashed Line**  
Subtle or gradational contacts between Holocene river alluvium and bounding geologic units. These boundaries are often associated with very low relief distal alluvial fan overlap onto Holocene river alluvium and are often located in historically plowed fields. Line location accurate to within 100 feet.

**Thin, Dotted Line**  
Approximately located boundary between Holocene river alluvium and bounding geologic units. Dotted line boundaries are reserved for areas which are significantly disturbed by anthropogenic activity. Placement of dotted line boundaries is based on a combination of field verification and historical aerial photo and topographic data interpretation. Line location accurate to within 500 feet depending on level of disturbance (plowed vs. paved, original topography maintained/obliterated etc.)

**Waypoint Location, showing station identification**

### Other Geologic Lines

**Thin, Solid Line**  
Accurate contact

**Thin, Dashed Line**  
Approximate contact

**Thin, Dotted Line**  
Concealed contact

**Hashed Line**  
Gradational Contact

**Solid, Bold Line**  
Accurate Fault

**Dashed, Bold Line**  
Approximate Fault

**Dotted, Bold Line**  
Concealed Fault

Figure 3