

# Terraces Map Unit Properties Table: Aztec Ruins National Monument

Table shows units mapped by Gillam (1998a) within Aztec Ruins National Monument. Colors in Map Unit column correspond to the geomorphic map poster (in pocket). Bold text refers to sections in report.

Age	Map Unit (Symbol)	Geologic Description	Geologic Features and Processes	Geologic Resource Management Issues	Geologic History
QUATERNARY (Holocene)	Modern floodplain (Qfp)	Modern floodplain, including active alluvial fans graded to the floodplain.	<p><b>Terraces</b>—three primary terraces levels (<b>Qt7u</b>, <b>Qt6a</b>, and <b>Qt5a</b>) step up from the modern floodplain (<b>Qfp</b>).</p> <p><b>Alluvium</b>—<b>Qfp</b> is composed of post-glacial alluvium.</p>	<p><b>Oil and Gas Development and Production</b>—well operations account for localized and relatively minor impacts to natural resources, including denuded vegetation and eroded and compacted soil on terrace surfaces.</p> <p><b>Adjacent Development</b>—potential impacts include loss of archeological resources, runoff-related erosion, and visual impairments.</p> <p><b>Localized and Regional Subsidence</b>—small depressions have developed in the vicinity of East Ruin, which is situated on <b>Qt7u</b>.</p>	<p><b>Animas River on the Landscape and Ongoing Incision</b>—incision and aggradation of the modern floodplain by the Animas River is ongoing.</p> <p><b>Glacial Record</b>—<b>Qfp</b> developed after the final retreat (about 12,000 years ago) of the Animas Glacier.</p>
QUATERNARY (Late Pleistocene)	Terrace 7, undivided (Qt7u)	Less than 3 m (10 ft) above the present floodplain at the monument, but elsewhere is higher (approximately 15 m [49 ft] above). Terraces graded to the Animas City moraines in Durango, Colorado. Elsewhere, divided into three levels (Qt7a, Qt7b, and Qt7c).	<p><b>Building Stone and Lithic Resources</b>—ancestral Puebloans used terrace materials such as boulders and cobbles for foundations and silt to make mortar and plaster.</p> <p><b>Terraces</b>—this terrace level was not mapped by either Brown and Stone (1979) or Ward (1990).</p>	<p><b>Piping</b>—primarily in <b>Qfp</b> and <b>Qt7u</b>, piping is a minor geohazard at the monument. Soil pipes have developed in an eroding bank of the Animas River. Could affect the stability of archeological sites via subsidence. Pipes may have cultural importance as the beginning of an excavated kiva.</p>	<p><b>Animas River on the Landscape</b>—lowest and youngest terrace at the monument.</p> <p><b>Glacial Record</b>—<b>Qt7u</b> developed approximately 25,000–19,000 years ago during the Pinedale glaciation.</p>
QUATERNARY (Late middle Pleistocene)	Terrace 6a (Qt6a)	27–34 m (89–112 ft) high (above the modern floodplain). <b>Qt6a</b> grades to the Spring Creek moraines in Durango, Colorado.	<p><b>Building Stone and Lithic Resources</b>—ancestral Puebloans used terrace materials such as boulders and cobbles for foundations and silt to make mortar and plaster.</p> <p><b>Terraces</b>—<b>Qt6a</b> is composed of glacial outwash from the Animas Glacier. It is the intermediate and middle-aged terrace level at the monument.</p>	<p><b>Bank Erosion and Landscape Restoration</b>—the NPS goal is to restore natural function and appearance while protecting cultural resources along the banks of the Animas River.</p> <p><b>Recreation and Land Use in the Animas River Corridor</b>—no park infrastructure was built on the floodplain (<b>Qfp</b>), so flooding is not a significant issue. A public trail along the river (<b>Qfp</b> and <b>Qt7u</b>) connects downtown Aztec to the monument; buck-and-rail fencing is meant to keep recreationists on the trail.</p>	<p><b>Animas River on the Landscape</b>—represents the “middle-aged” floodplain cut by the Animas River at the monument.</p> <p><b>Glacial Record</b>—<b>Qt6a</b> developed approximately 160,000–140,000 years ago during the Bull Lake glaciation.</p>
QUATERNARY (Middle Pleistocene)	Terrace 5a (Qt5a)	43–46 m (141–151 ft) high (above the modern floodplain). Graded to the Durango moraines in Durango, Colorado.	<p><b>Building Stone and Lithic Resources</b>—ancestral Puebloans used terrace materials such as boulders and cobbles for foundations and silt to make mortar and plaster.</p> <p><b>Terraces</b>—<b>Qt5a</b> is composed of glacial outwash from the Animas Glacier. It is the highest and oldest terrace level within the monument.</p>	<p><b>Abandoned Mineral Lands</b>—abandoned gas well occurs within the expanded boundaries of the monument. Associated map unit unknown.</p> <p><b>Paleontological Resource Inventory, Monitoring, and Protection</b>—terraces contain reworked Paleozoic invertebrate fossils in limestone cobbles.</p>	<p><b>Animas River on the Landscape</b>—the river began to incise its channel following the Laramide Orogeny but before the pre-Bull Lake glaciation. <b>Qt5a</b> was the first terrace to be cut by the Animas River at Aztec Ruins.</p> <p><b>Glacial Record</b>—<b>Qt5a</b> developed approximately 340,000–250,000 years ago during the pre-Bull Lake glaciation.</p>