

News Release: Arizona Geological Survey 07.02.2009

Contact: Michael Conway (520.209.4146; michael.conway@azgs.az.gov)

Release of Earth Fissure Study Area Maps: Harquahala, Maricopa County, and Friendly Corners, Tator Hills, and Signal Peak Study Areas of Pinal County

Tucson.

New earth fissure maps showing confirmed and unconfirmed earth fissures for Harquahala, Maricopa County, and the Friendly Corners, Tator Hills and Signal Peak areas of Pinal County are complete. The 1:24,000 scale maps can be downloaded free at the Arizona Geological Survey's (AZGS) Earth Fissure Center (<http://azgs.az.gov/efmaps>).

For interactive viewing and custom map-making at up to 1:12,000 scale, visit the Arizona Department of Real Estate's Earth Fissure Viewer at <http://azmap.org/fissures>.

The Harquahala map marks the completion of earth fissure mapping in Maricopa County. The chief fissure here is the Rodgers Fissure, which is about one mile in length. Earlier released earth fissure maps for Maricopa County, include: Chandler Heights, Luke, Mesa, Scottsdale, Wintersburg and Apache Junction, the latter co-resides in Pinal County.

Tator Hills south of Arizona City is home to more than a dozen fissures including several large fissures that range from ½ mile to over 1 mile in length. One of the more prominent fissures is two-thirds of a mile in length, 3 to 10 ft wide, and up to 15 ft deep. Fissures are largely confined to unimproved lands or to agricultural fields.

Signal Peak, located about 6 miles north-northeast of Casa Grande, contains about six fissures, one of which slices for nearly a mile through a housing addition west of Signal Peak.

Friendly Corners, eight miles east of Picacho Peak and consisting entirely of agricultural lands, hosts one confirmed and several unconfirmed earth fissures.

For ease of use, the maps include an up-to-date road network and shaded relief that accentuates local topography. Colored lines are used to denote fissure location and status: 1) solid black line for continuous fissures; 2) solid red line for discontinuous fissures; and 3) a dashed green line for unconfirmed but suspected fissures.

The earth fissure planning maps (1:250,000 scale) for Maricopa and Pinal Counties were updated, too, to reflect the current status of earth fissure mapping.

AZGS Contact Information

Michael Conway 520.209.4146 ph; 520.971.3688 cell michael.conway@azgs.az.gov
Todd Shipman 520.770.3500 ph todd.shipman@azgs.az.gov

Phoenix Office
Mimi Diaz 602.708.8253 cell

mimi.diaz@azgs.az.gov

BACKGROUND INFORMATION

Earth fissures are cracks, seams, or separations in the ground caused by tensional forces related to differential land subsidence that accompanies extensive groundwater pumping. The earliest appearance of fissures in Arizona was near Eloy in 1927. Individual fissures range in length from hundreds of feet to miles, and in width from inches to tens of feet. Currently, geoscientists believe that fissures initially form at the groundwater table and then propagate upwards hundreds of feet to the surface. Because fissures are commonly oriented perpendicular to local drainages, they are capable of capturing surface runoff. Inrushing waters may cause dramatic changes in fissure geometry, both length and width, leading to erosion of sidewalls and gully development.

Earth fissures are a geologic hazard in the arid valleys of central and south-central Arizona. As population centers expand into subsiding areas of basins/valleys, residents and structures are placed in closer proximity to fissures. Property owners are encouraged to 1) set structures as far away from fissures as possible, and 2) prevent water from entering them.

Reports of earth fissures are confined to Cochise, Maricopa, Pima, and Pinal counties in central and south-central Arizona. In 2007, AZGS released 1:250,000-scale planning maps of the four counties showing the approximate locations of earlier reported earth fissures. These earth fissure planning maps are available free, online at the Earth Fissure Center at www.azgs.az.gov/efc.

AZGS is charged by state statute with mapping earth fissures in Arizona. The earth fissure map information is then provided for public release via the State of Arizona's Internet map service accessible from the Arizona Department of Real Estate's website.

###