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NEWS RELEASE: **Release of New Pinal County Earth Fissure Maps**

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Tucson. The first county wide compilation of earth fissures in Pinal County is now complete. Maps of the final three earth fissure study areas -- Sacaton Butte, Santa Rosa Wash, and White Horse Pass -- are available online at the Earth Fissure Viewer. The comprehensive Pinal County Earth Fissure Map (1:250,000 map scale) showing all mapped and reported earth fissures in the county is available in PDF format.

Over the past three years, Arizona Geological Survey geologists mapped 86 miles of continuous and discontinuous earth fissures in Pinal County. An additional 167 miles of reported fissures were visited and examined but remain unconfirmed either because recent agricultural or construction activities masked their appearance or because they lack some of the physical attributes used to identify earth fissures.

Nearly 43 miles (50%) of all mapped fissures are exposed on the east side of the Picacho Basin, adjacent to the Picacho Mountains and Picacho Peak. The three newly mapped study areas yielded 5.62 miles of earth fissures, with Santa Rosa Wash accounting for nearly three miles of that. An additional 7.7 miles of previously reported fissures remain unconfirmed.

Because of rapid urbanization in north-central Pinal County, earth fissures in the Chandler Heights and Apache Junction study areas along the Maricopa-Pinal County line offer the most immediate problems for county and municipal authorities.

Besides posing a threat to infrastructure and livestock, fissures are an illegal dumping ground for tires, appliances, construction debris, manure and other sundry items. Because the fissures are believed to extend down to the water table, earth fissures represent a potential threat from surface runoff contaminating groundwater resources.

The AZGS Earth Fissure Mapping Program will continue to update maps as the earth fissures grow and new ones form. AZGS geologists will begin focusing on ways to predict where and when the fissures will appear and work with local building officials and engineers on way to mitigate existing earth fissures to minimize their impacts.

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BACKGROUND INFORMATION

Earth fissures are associated with land subsidence that accompanies extensive groundwater withdrawal. The earliest appearance of fissures in Arizona was near Eloy in 1928. Individual fissures range in length from hundreds of feet to miles, and in width from inches to tens of feet.

Currently, geologists believe that fissures 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. In-rushing waters may result in rapid erosion of sidewalls and gully development causing dramatic and sudden changes in fissure geometry – length, depth, and width. Property owners are encouraged to set structures as far away from fissures as possible and to prevent water from entering them.

In Arizona, reports of earth fissures have been confined to Cochise, Maricopa, Pima, and Pinal counties of 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.

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