

UA Sense of Place Trip #1: Santa Cruz River Basin

Trip #1 traverses the Santa Cruz River Basin near Tucson. Geology starts on “A” Mountain, a suite of volcanic and sedimentary rocks that formed during explosive volcanism 20-25 million years ago (McGarvin, 2001). Physical properties of rocks and how they illuminate mountain formation are emphasized. Adjacent to “A” Mountain is Tumamoc Hill, where unobstructed views promote discussion of Basin and Range concepts (McPhee, 1981). South of Tucson, an entrenched tributary of the Santa Cruz River called Brickyard Arroyo shows Holocene wetlands (buried organic soils) and agricultural settlements (prehistoric artifacts).

Ecology starts with buffelgrass (*Pennisetum ciliare*) growing on rocky slopes of "A" Mountain. Buffelgrass is native to Africa, but it was introduced into the Southwest in the 1940s and has since expanded throughout the Sonoran Desert (Búrquez-Montijo et al., 2002). Buffelgrass "invasion" of the Sonoran Desert is a serious ecological concern (Yetman and Búrquez, 1994). Additionally, Tumamoc Hill is home to the Desert Laboratory, a premier center of desert ecology and paleoenvironmental science for more than 100 years (Bowers 1990). Principal features of the Lab are its enclosed area of pristine desert and the permanent recording of saguaro cacti in 1908 in order to observe them throughout many decades (Pierson and Turner 1998).

Cultural history starts on the summit of Tumamoc Hill, where bedrock mortars, rock art, and rock roomblocks speak of people who lived there from AD 500 to AD 700 (Fish et al., 2007). Why would people live on a hilltop, far removed from water and agricultural fields of the Santa Cruz River floodplain? Later on this trip, Mission San Xavier del Bac is a modern, active church as well as a glimpse of the Spanish and Mexican periods of the American Southwest. The building is a blend of Spanish, Mexican, and Native American architecture and design (Frontain, 1968). The arrival of Padre Francisco Eusebio Kino in 1687 started a grand change of cultures and environments of southern Arizona (Fontana, 1994).

Bowers, J.E. 1990. A debt to the future: scientific achievements of the Desert Laboratory, Tumamoc Hill, Tucson, Arizona. *Desert Plants*, 10, 9–47.

Búrquez-Montijo, A., Miller, M.E., and Martínez-Yrizar, A. 2002. Mexican grasslands, thornscrub, and the transformation of the Sonoran Desert by invasive exotic buffelgrass (*Pennisetum ciliare*). In B. Tellman (Ed.), *Invasive exotic species in the Sonoran region*, pp. 126–146. Tucson: University of Arizona Press.

Fish, S.K., Fish, P.R., and Christopherson, G. 2007. Early occupations on Tumamoc Hill. *Archaeology Southwest*, 21(3), 4–5.

Fontana, B.L. 1994. *Entrada: The legacy of Spain and Mexico in the United States*. Tucson: Southwest Parks and Monuments Association.

Frontain, D. 1968. *San Xavier del Bac: A living mission*. Tucson: Los Amigos.

McGarvin, T.G. 2001. *Field guide to “A” Mountain and description of surrounding region, Pima County, Arizona*. Open-File Report 01-07. Tucson: Arizona Geological Survey.

McPhee, J.A. 1981. *Basin and Range*. New York: Farrar, Straus & Giroux.

Pierson, E.A., and Turner, R.M. 1998. An 85-year study of Saguaro (*Carnegiea gigantea*) demography. *Ecology*, 79, 2676–2693.

Yetman, D., and Búrquez, A. 1994. Buffelgrass–Sonoran Desert nightmare. *Arizona Riparian Council Newsletter*, 7(3), 1, 8–10.