



NICO HAUWERT

Austin Water Balcones Canyonland Preserve Program
Program Manager, Karst Hydrogeologist
1979-Present

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I moved to Austin from Houston in 1979 and began exploring the caves of Barton Creek and South Austin while completing a B.S. in Geology at U.T. Beginning in 1993 I served as Senior Hydrogeologist and later Assessment Program Manager for the Barton Springs/Edwards Aquifer Conservation District. In this position I initiated aquifer-wide sampling of the Barton Springs Segment for contaminants including trace petroleum, and pesticides, finding for the first time widespread water quality contamination, not unexpected for a karst aquifer under an urban environment, but important consideration for later attempts to list the Barton Springs salamander and recognizing the sensitivity of Barton Springs.

In 1994 I partnered with John Hansen of the USGS to map the surface geology of the Barton Springs Segment south to the Blanco River. From the 1990s up to the present I helped to document the widespread practice of filling caves across the Austin area, and participated in or led efforts to remove trash and ranch fill from many caves, in order to create cave preserves or resources for public education.

In the 1980s and 1990s, scientific literature typically reported that groundwater in the Edwards Aquifer flowed slowly through small pores and together with the soil provided filtration over years required to transport through the aquifer. As a result of this poorly understood science, wastewater irrigation was commonly done, including in the Travis Country subdivision of Barton Creek, which led to multiple pathogenic outbreaks across Central Texas. My studies of the aquifer demonstrated its sensitivity and supported federal listing of the Barton Springs salamander, and the need for acquisition of preserve lands.

From 1993 to 1994, as Senior Hydrogeologist for the Barton Springs/Edwards Aquifer Conservation District (BS/EACD,) I conducted the first aquifer-wide contamination assessment. This report countered a common belief at the time (that if urbanization caused contamination why had no one ever documented it) and became front page news on January 8, 1995 and used as a basis for listing the Barton Springs salamander as endangered in 1996. The study angered developers such that lobbyists successfully convinced the Texas Legislature to reduce the funding source of the BS/EACD through commercial well pumping from \$0.32/1,000 gallons to \$0.17/1,000 gallons accompanied by a warning from the lobbyists that the BS/EACD should get its priorities straight.

NICO HAUWERT CONT'D

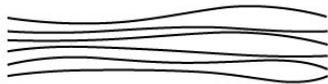


Nico Hauwert dye tracing

Instead, the BS/EACD simply shifted its funding source more toward research grants and less from pumpage. BS/EACD received grant funding from the Environmental Protection Agency to initiate groundwater tracing, creek flow loss, and water quality studies and hired new scientists and partnered with the City of Austin Watershed Protection Department to conduct them. The dye tracing began at small scale in 1993 to locate source areas to Martine Springs and in 1996 began tracing swallets in Barton Creek and later across the aquifer. The tracing results directly showed that groundwater could move across the aquifer and discharge from springs within days instead of years, demonstrating a new level of sensitivity that was not previously known. The source

areas for Barton Springs were also directly defined for the first time. By mapping cave basins and measuring creek flow loss along the major creeks across the aquifer, I helped to identify the most important lands for preserve acquisition. My flow-loss studies showed that upland areas of the recharge zone provided half or more of the recharge to Barton Springs. In reviewing proposed development sites, I discovered many caves that were not identified, including the proposed wastewater effluent pond of the proposed 1,400-home Jeremiah Ventures development, which as a result, was acquired for conservation land.

My 2009 dissertation on the Barton Springs Edwards Aquifer pulled together a comprehensive look at water sources to Barton Springs. Since 2017 I have served as Program Manager for the Balcones Canyonland Preserve which includes preserving Barton Creek Wilderness Park and many caves in South Austin that recharge Barton Springs.

BARTON CREEK

TIME STREAM