

# Wilbarger Creek Watershed

## WILBARGER CREEK WATERSHED FACTS

The Wilbarger Creek watershed contains three rapidly growing communities - Pflugerville, Manor and Elgin.

Lake Pflugerville, a 180-acre drinking water and recreational lake, is also found within the watershed.

Drainage area: 116,146 acres (181.5 square miles)  
 Stream length: 44.8 miles  
 Stream gradient: 7.2 feet/mile  
 Watershed slopes: 1-3 percent  
 Soil type: Houston Black  
 Ground cover: prairie grasses, shrubs, deciduous trees  
 Land uses supported by native soils: pasture, cultivated farmland  
 Soil limitations: severe for building foundations  
 Typical water chemistry: neutral pH, dissolved oxygen less than saturation, low in nitrates, fresh to brackish salinity.

USGS landcover (2001): Row crops - 27.5%  
 Grassland/herbaceous - 18.3%  
 Pasture/hay - 18%  
 Deciduous forest - 16.8%  
 Shrubland - 12%  
 Evergreen forest - 3.8%  
 Misc. (includes residential and industrial) - 3.4%

Cottonwood Creek Watershed  
25,783 Acres

Willow Creek Watershed  
14,631 Acres

Dry Creek NE Watershed  
11,989 Acres

Lockwood Creek Watershed  
7,405 Acres



Photo 1. Lake Pflugerville, the municipal water supply reservoir, is augmented by water pumped from the Colorado River near Del Valle.



Photo 2. Looking downstream, this view of Wilbarger Creek at Weiss Lane runs through a residence and goat farm.



Photo 3. In a downstream view, this riparian pasture on the right bank of Wilbarger Creek at Gregg Lane is the site of a proposed wastewater treatment plant.



Photo 4. As this upstream view shows, gabion stream bank protection is built along Wilbarger Creek at Jones Road.



Photo 5. Dry Creek at Little Road has an ephemeral streambed, as this upstream view shows.



Photo 6. Wilbarger Creek at Biting School Road is an intermittent stream with a wooded riparian buffer, as shown in this upstream view.



Photo 7. A trellis bridge crosses over a deep stream channel of Wilbarger Creek at Upper Elgin Road. This is a downstream view.



Photo 8. LCRA staff measures stream channel cross-sections at Lower Dry Creek at Upper Elgin Road. This view looks upstream.



Photo 9. An LCRA Hydromet streamflow gauge is situated on Wilbarger Creek at FM 1704 downstream of Elgin.



Photo 10. This incised channel of Wilbarger Creek at Lower Elgin Road contains alluvium in its streambed. This is an upstream view.

## Watershed Summary

Wilbarger Creek drains a large area in Central Texas east of the Interstate 35 corridor. Its watershed is within the Blackland Prairie ecoregion. Land use is primarily rangeland and cultivated farmland, although urban development is encroaching from the City of Pflugerville and the State Highway 130 corridor. Vegetation is deciduous woods in the lower parts of the watershed near the Colorado River and prairie grasses in the middle and upper parts of the watershed. The dominant soil type is Houston Black, consisting of dense clay with high moisture absorption capability leading to high shrink-swell potential, which presents hazards for building foundations. The clay soils in most of the watershed are derived from the Taylor marl formation of Eocene Age. In the lower part of the watershed, the Hooper mudstone formation of the Wilcox Group outcrops in the streambed and banks of Wilbarger Creek at Lower Elgin Road (see photo). In its natural condition, Wilbarger Creek is an intermittent stream that flows only seasonally. The advent of continuous discharge of wastewater effluent during all seasons of the year may change the hydrologic regime of Wilbarger Creek to that of a perennial stream.



The bank of Wilbarger Creek at Lower Elgin Road has an outcrop of Hooper mudstone formation.

## Fish Community Assessment

An assessment of the fish community in the upper reaches of Wilbarger Creek was conducted on October 11, 2010. Wilbarger Creek, like many streams in the region, experiences a wide range of flow conditions (from drought to flood) that influence aquatic habitat. During this assessment, the creek was not flowing and habitat in the reach was limited to a series of pools. Despite the lack of flow, a diverse fish community was collected including a healthy stream. Among the 13 fish species collected were four species of minnows, four species of sunfish and largemouth bass. Most of these species are considered tolerant and survive a range of harsh environmental conditions such as warm summertime water temperatures and low dissolved oxygen.

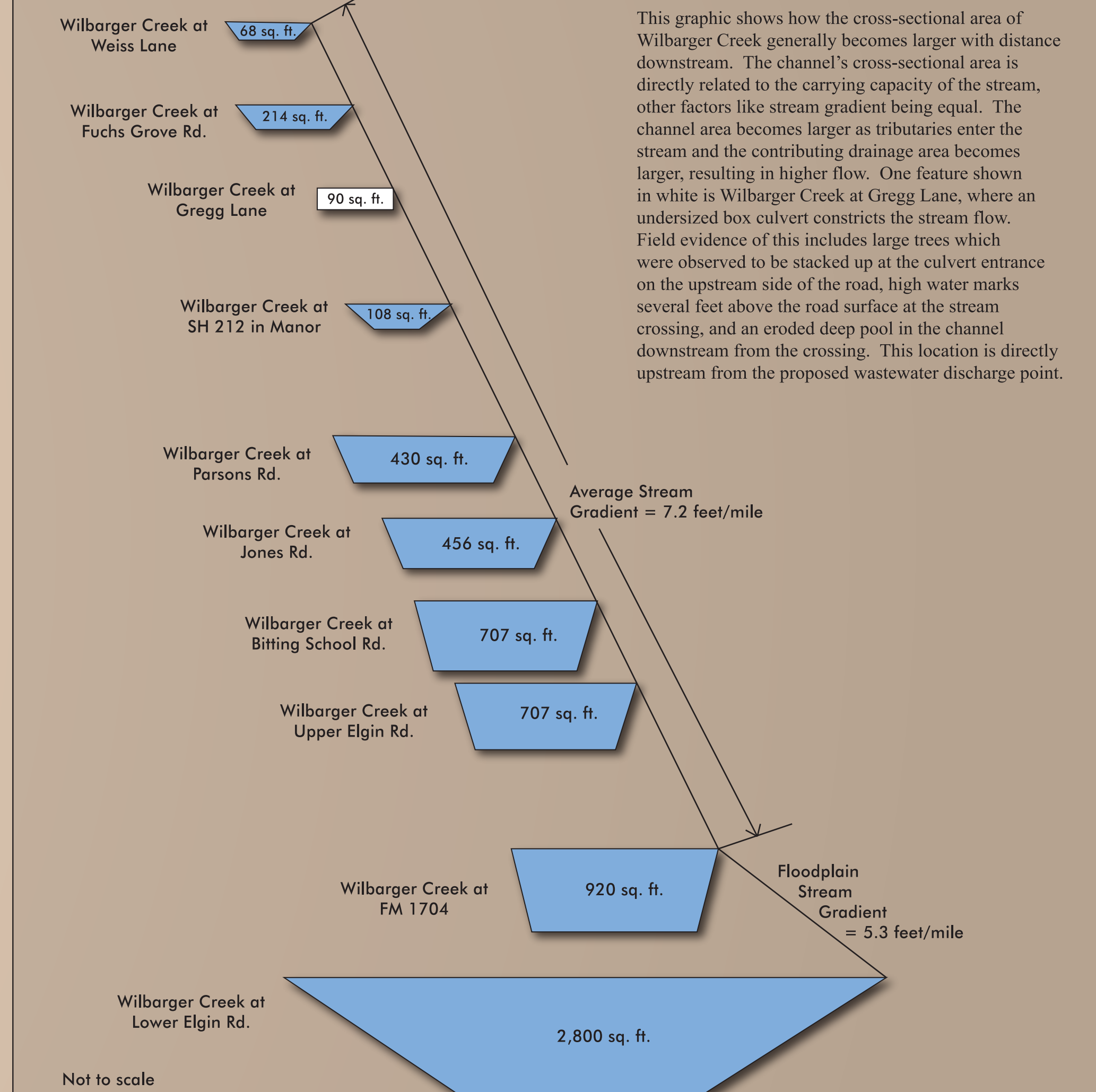
Common Name	Scientific Name	Number Collected
Glizzard Shad	<i>Dorosoma cepedianum</i>	1
Central Stonewormer	<i>Comptosia anomala</i>	2
Red Shiner	<i>Cyprinella lutrensis</i>	7
Black Bullhead Catfish	<i>Ameiurus melas</i>	9
Yellow Bullhead Catfish	<i>Ameiurus nebulosus</i>	1
Western Mosquitofish	<i>Gambusia affinis</i>	6
Green Sunfish	<i>Lepomis cyanellus</i>	12
Orangespotted Sunfish	<i>Lepomis humilis</i>	10
Bluegill Sunfish	<i>Lepomis macrochirus</i>	16
Longear Sunfish	<i>Lepomis megalotis</i>	5
Largemouth Bass	<i>Micropterus salmoides</i>	2
Bullhead Minnow	<i>Pimephales vigilans</i>	1
Weed Shiner	<i>Notopterus texanus</i>	1



Photograph by Chad Thomas, Texas State University

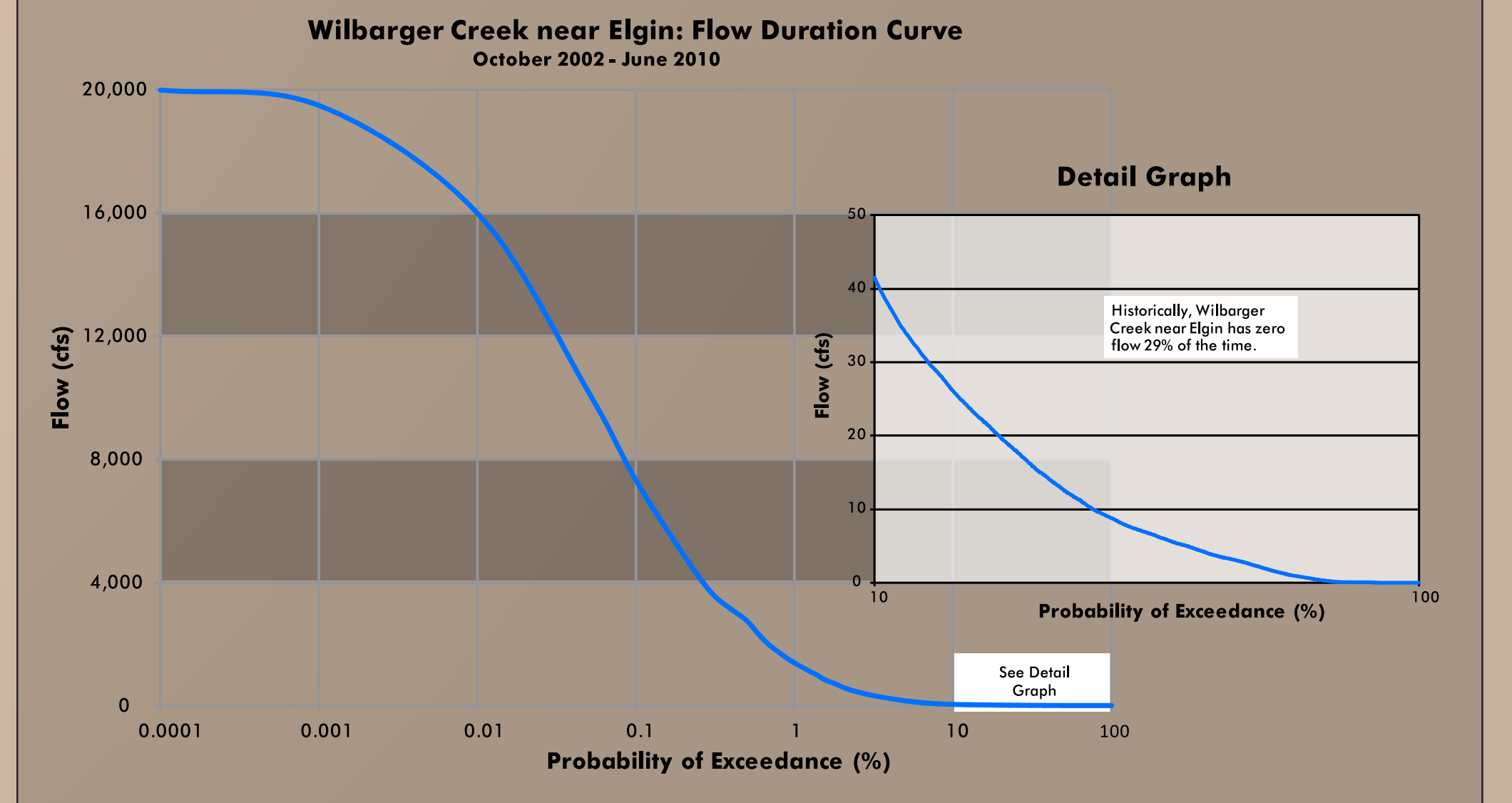
The Orange Spotted Sunfish, a unique and colorful native sunfish, was abundant in the collection.

## Wilbarger Creek Channel Cross-Sections



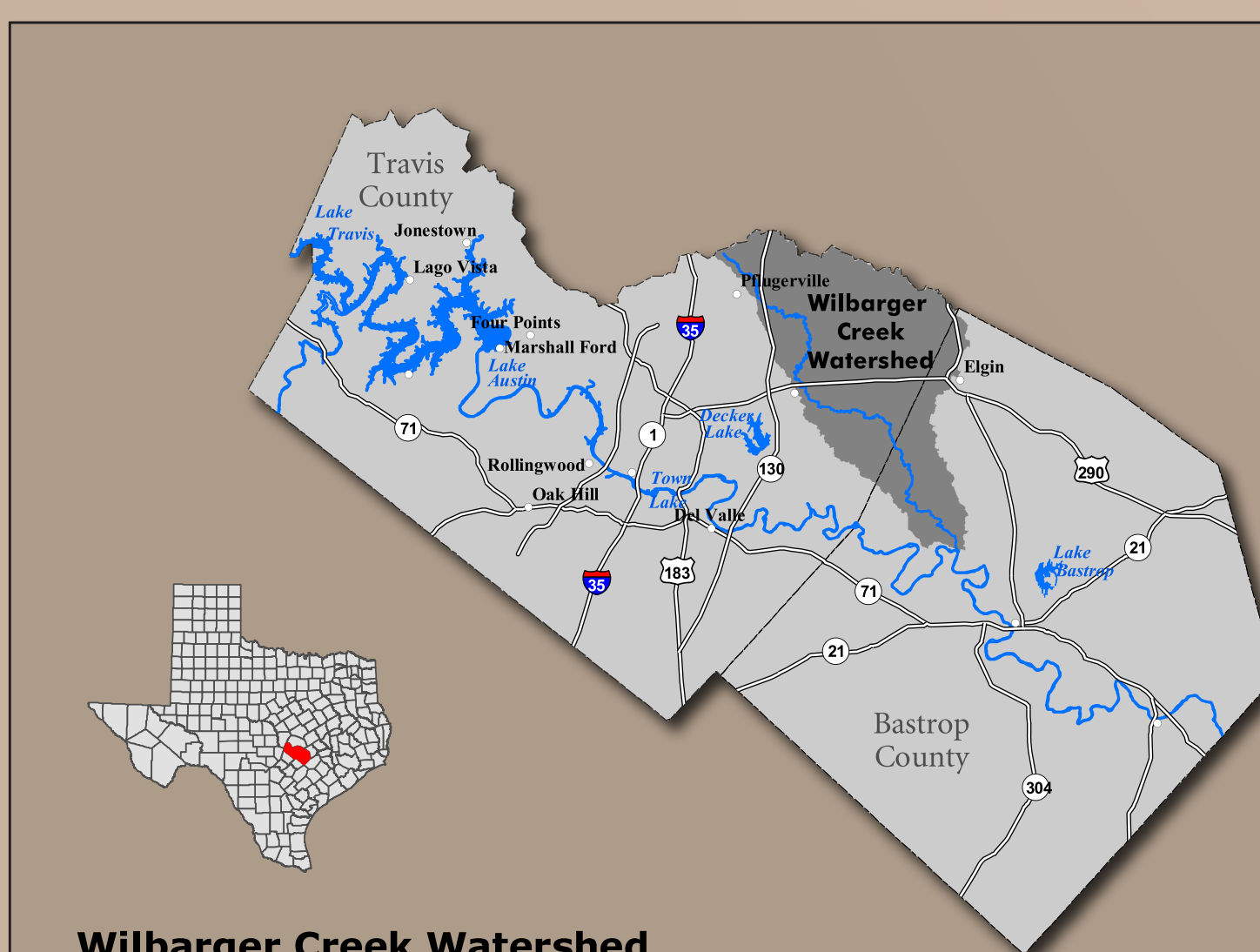
## Flow Duration Curve

This chart shows percent of the time that any rate of stream flow is equaled or exceeded. The flow duration curve for Wilbarger Creek is based on 8 years of records collected every 15 minutes and reflects more than 27,000 data points. The highest recorded flow rate was 20,000 cubic feet per second (cfs) on January 13, 2007. Of interest for this study, the flow exceeded zero 71 percent of the time. In other words, Wilbarger Creek at FM 1704 near Elgin has zero flow 29 percent of the time. In its natural condition, Wilbarger Creek is an intermittent stream. With significant and constant contribution of wastewater discharge, Wilbarger Creek will become a perennial stream with measurable baseflow. Water quality at times of low flow will depend on quality of the wastewater effluent.



Data Source: Aerial Photography - Capital Area Council of Governments (CAPCOG); Watersheds - City of Austin; Rivers and Streams - USGS National Hydrography Dataset (NHD); Roads - Capital Area Council of Governments (CAPCOG)

This map has been produced by LCRA for its own use. Accordingly, certain information, features or details may have been emphasized over others. LCRA does not warrant the accuracy of this map as to scale, accuracy or completeness. Map compiled January 2011.



Wilbarger Creek Watershed  
Travis and Bastrop Counties, Texas

## Legend

- Photo Location and Direction
- Major Roads
- River/Stream
- County Boundary



## CORRELATION OF PHOTOGRAPHS TO THE MAP

The red arrows on the watershed map show the location where a photograph was taken. For example, the red arrow with 5 relates to photo 5. The arrow orientation indicates the direction the photograph was taken, such as 5 is looking east. The photographs were taken in 2010.



Colorado River Confluence