



# The Natural History of an Urban Creek: Waller Creek

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Austin Water Utility – Center for Environmental Research



# Natural History

Understanding whole organisms in context

Scientific - Ecological understanding shaped by cultural contexts

Literary - Cultural understanding shaped by ecological contexts

Nonhumans – Objects and Subjects



"The idea of nature contains, though often unnoticed, an extraordinary amount of human history."

Raymond Williams, "Ideas of Nature"



# Knowing Waller Creek

Nonhuman Understanding

## What can we learn from the natural history of an urban creek?

“I’ll learn’em to steal my house!” he cried. “I’ll learn’em, I’ll learn’em!”

“Don’t say ‘learn’em,’ Toad,” said the Rat, greatly shocked. “It’s not good English.”

“What are you always nagging at Toad for?” inquired the Badger, rather peevishly. “What’s the matter with his English? It’s the same what I use myself, and if it’s good enough for me, it ought to be good enough for you!”

“I’m very sorry,” said the Rat humbly. “Only I think it ought to be ‘teach’em,’ not ‘learn’em.’”

“But we don’t want to teach’em,” replied the Badger. “We want to learn’em – learn’em, learn’em! And what’s more, we’re going to do it, too!”

- Kenneth Grahame, *The Wind in the Willows* (1908)



## Decline of UK Population

The water vole is found throughout riparian habitat in mainland Britain. However the water vole suffered a catastrophic decline in the latter part of the 20th century. A survey carried out by the Mammal Society (1989-90) showed that the species had been lost in 94% of the sites where it had occurred earlier in the century.

This decline has been most rapid in the last 30 years and has accelerated through the 1980's and 90's.

A survey conducted by the Urban Wildlife Trust (1997) indicated that population decline in urban areas might not be as dramatic as elsewhere. The urban landscape appears to provide a stronghold for the water vole.

Water Vole (*Arvicola terrestris*)



## Urban water voles

### “recombinant ecology”

Lancashire Wildlife Trust has discovered healthy populations of endangered water voles on some stretches of the Leeds & Liverpool Canal.

This shy creature is actually widespread there because the canal still has brickwork banks in many places and water voles are able to burrow between the bricks.

Ecologists have been surprised to discover that urban water vole populations are doing much better than rural populations probably because there is less intensive management of riparian areas in urban wastelands and abandoned canals and no American minks, since they shy away from urban habitat.



# Knowing and Inhabiting Waller Creek



## Nature/Society Hybrid Places – Human/Nonhuman Coproductions

We need to embrace the full continuum of a natural landscape that is also cultural, in which the city, the suburb, the pastoral, and the wild each has its proper place, which we permit ourselves to celebrate without needlessly denigrating the others.

*William Cronon Uncommon Ground: Rethinking the Human Place in Nature [1995]*







# Knowing Waller Creek

Human Understanding  
and Human Representations

## Lower Waller Creek – A Dump

We trust you need no reminding that Lower Waller Creek, from Waterloo Park to Town Lake, is a dump.

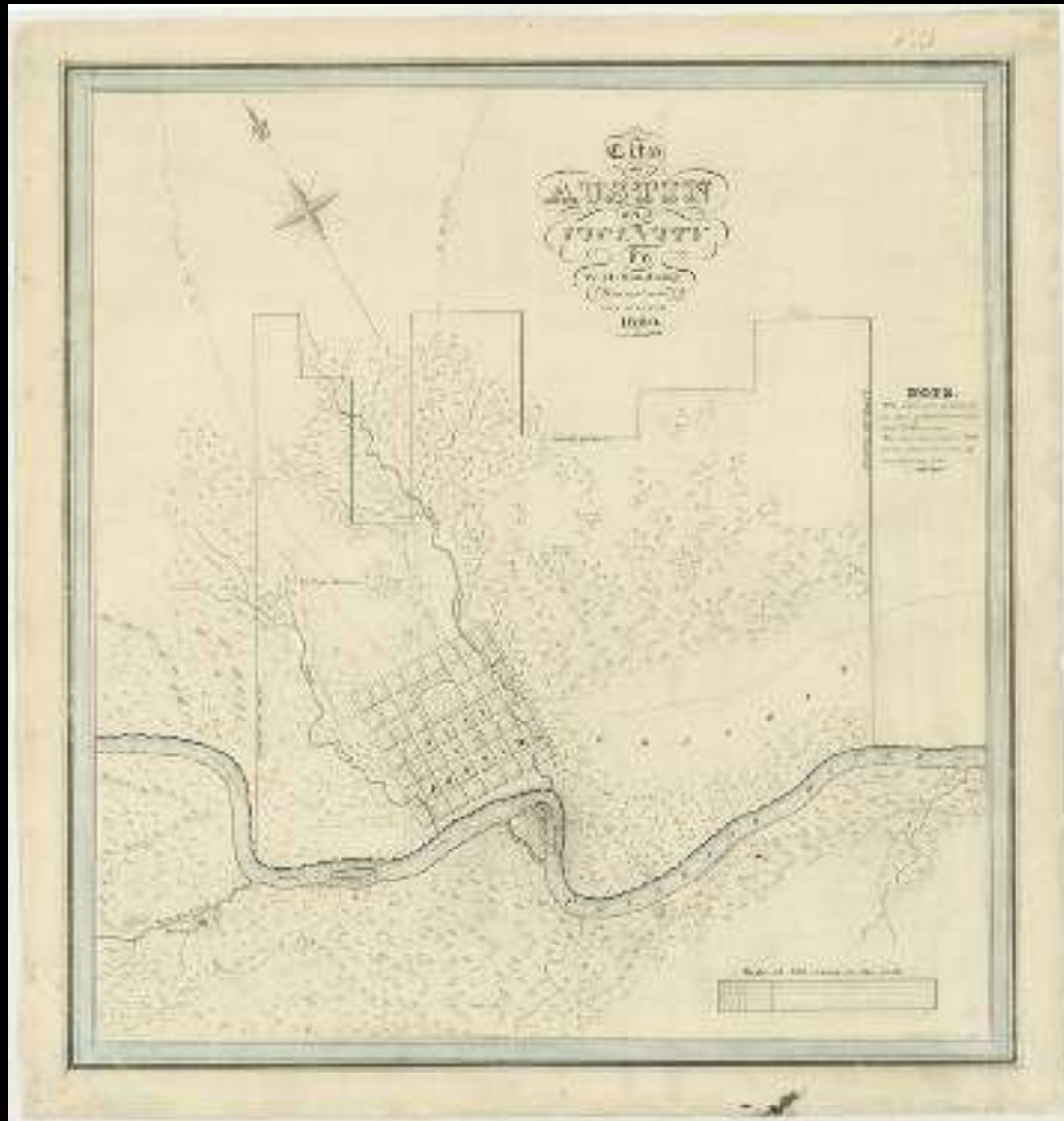
Or, to pinch a couple of the mayor's favorite phrases, "a running sore" and "an ugly hole in the ground."

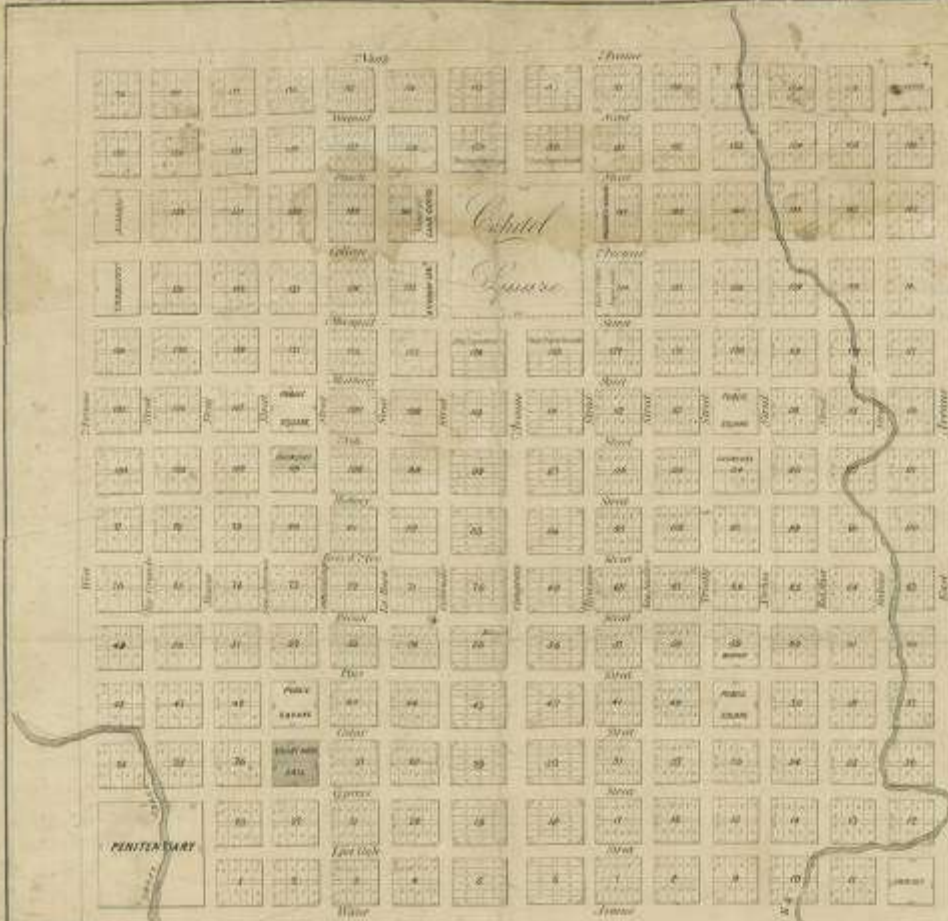
This is a point that seems conceded by "citizen" and "developer" alike, though their visions of what Waller Creek should look like may vary.

Mike Clark-Madison Austin Chronicle 2002



# History - Austin 1839





PLAN  
of the City of  
**AUSTIN.**

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1890



PARTIAL VIEW OF  
**AUSTIN, TEXAS.**

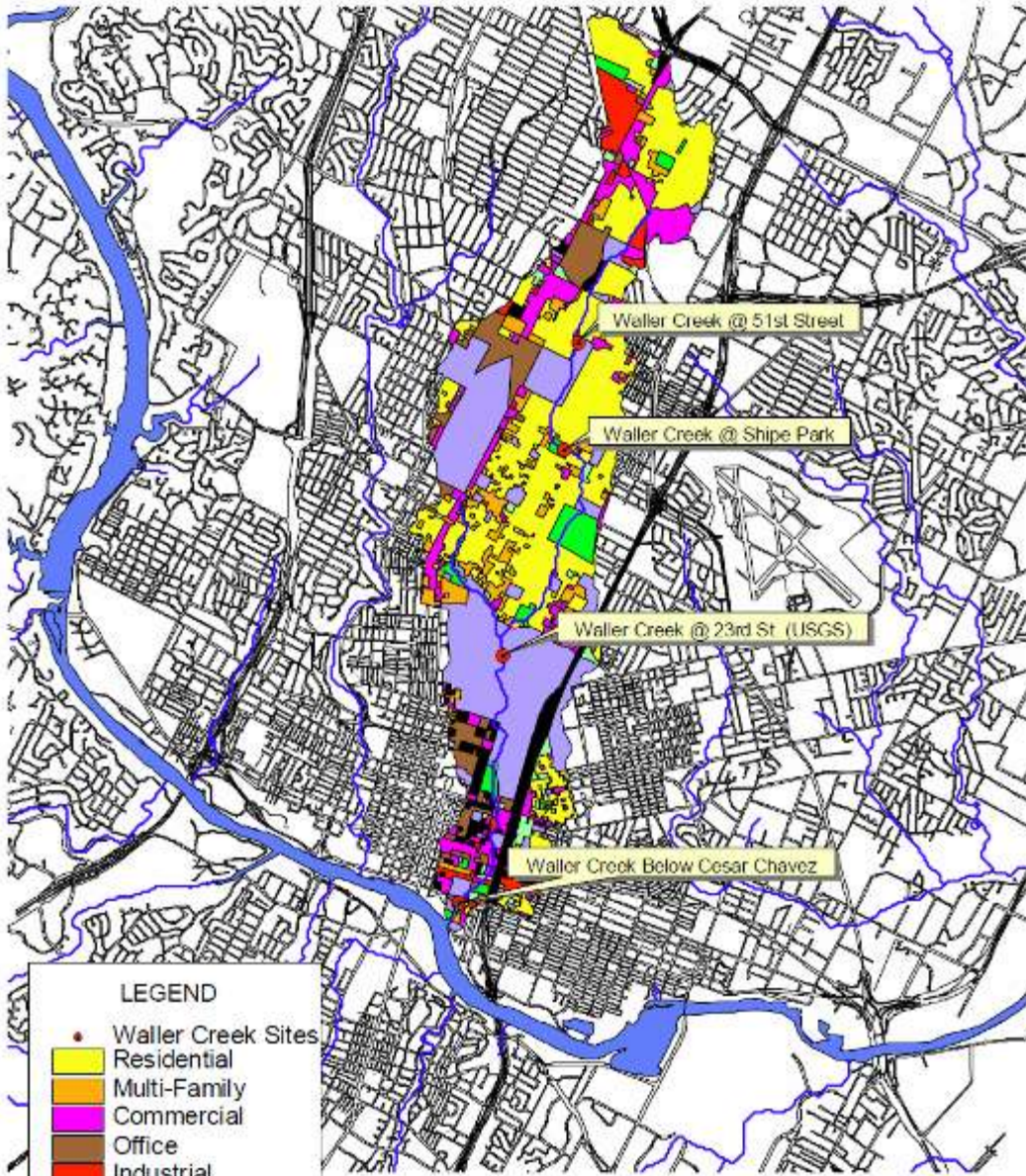
The Capital of the State of Texas, and the seat of the Government of the State.

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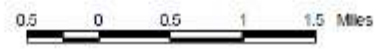
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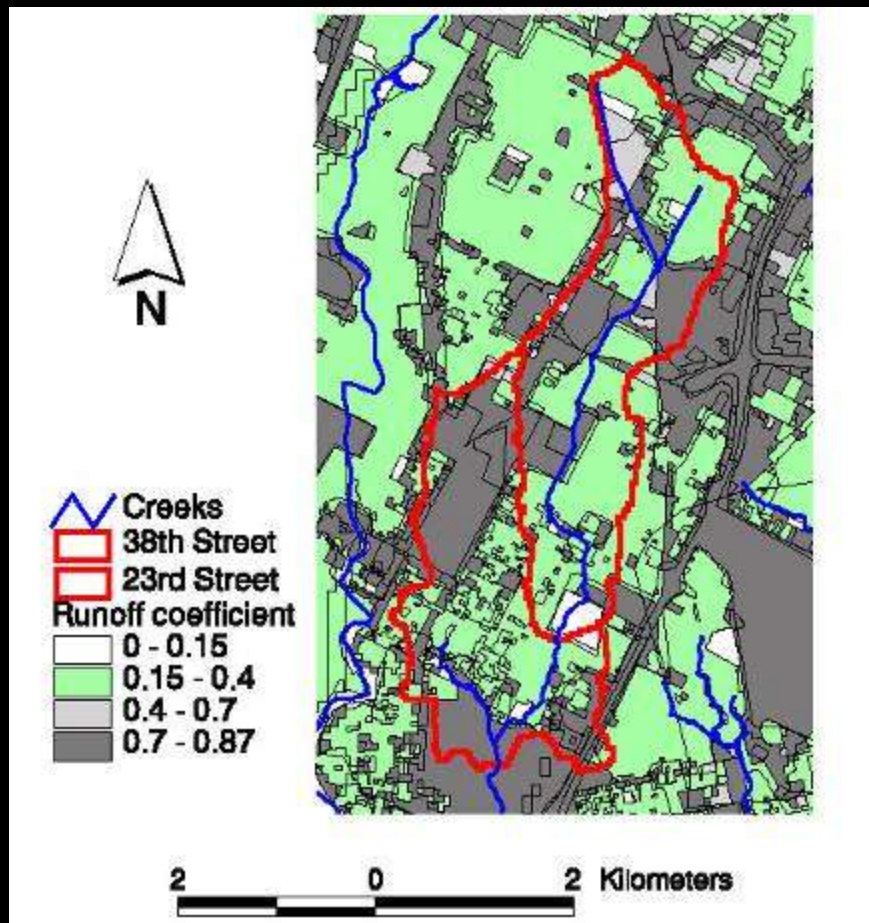
**LEGEND**

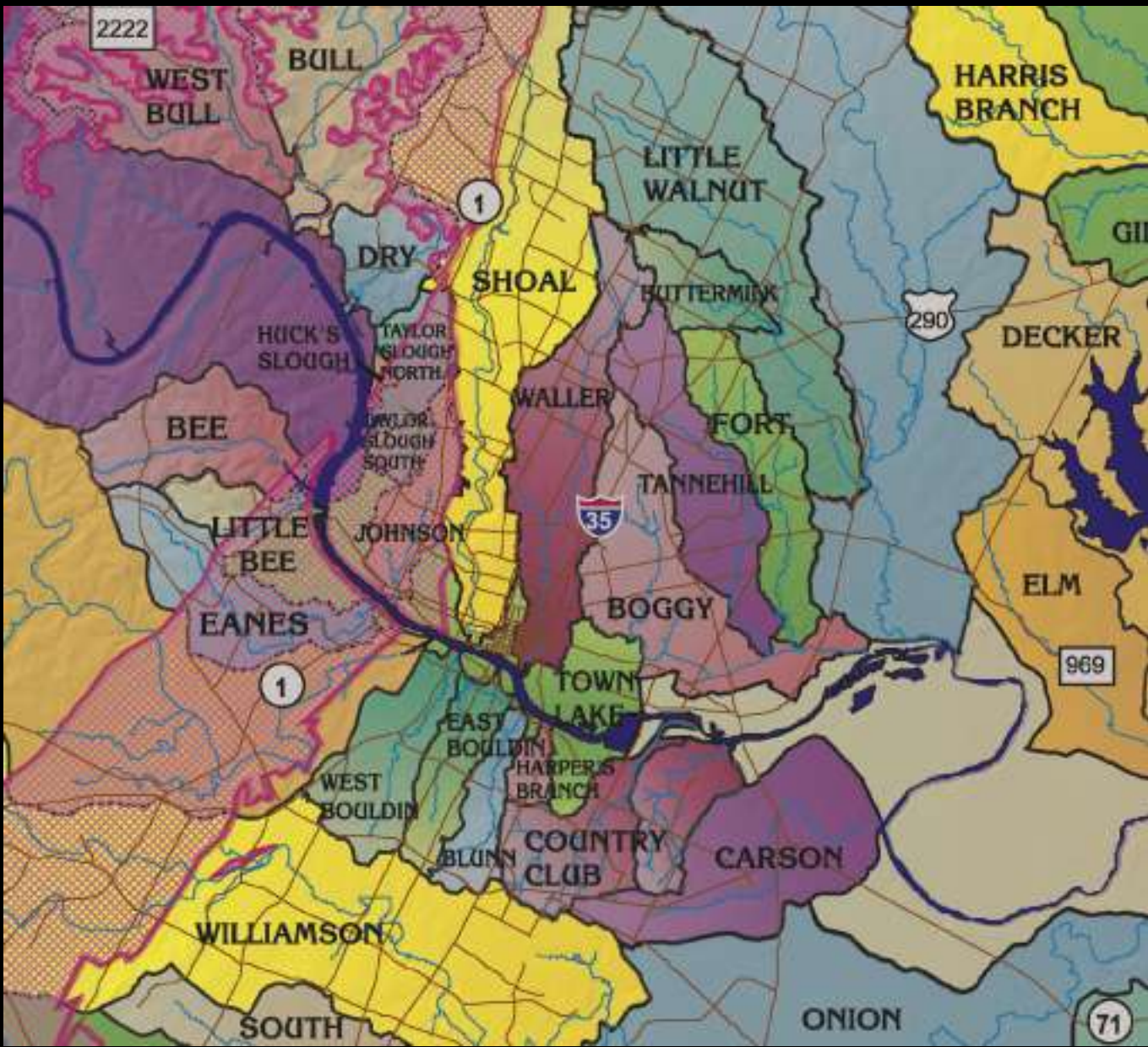
- Waller Creek Sites
- Residential
- Multi-Family
- Commercial
- Office
- Industrial
- Civic
- Park
- Transportation
- Undeveloped



Waller Creek is a 3662 acre watershed located within the urban core of the City of Austin, Texas.

Two flow gauging stations, set up by the US Geological Survey (USGS), are located at 23rd and 38th Streets and have drainage areas of 2,643 acres and 1,416 acres respectively.





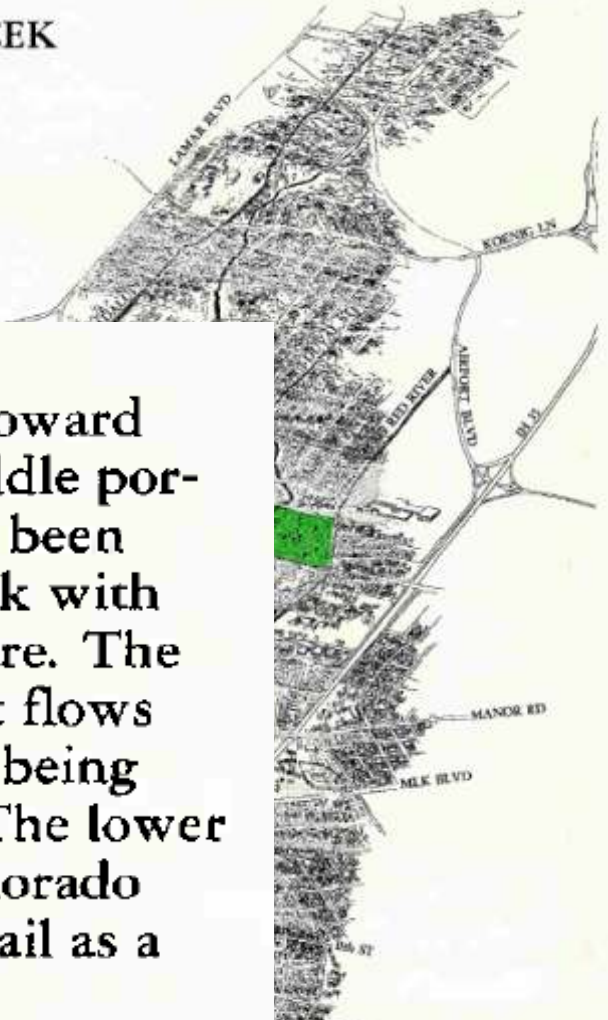




Austin



# WALLER CREEK



## WALLER CREEK:

Waller Creek is rapidly moving toward fulfillment of its potential. The middle portion, 15th Street to 10th Street, has been virtually completed as an urban park with Waterloo Park and Symphony Square. The upper portion of Waller Creek, that flows through the University of Texas, is being planned as a linear park and trail. The lower portion, from 10th Street to the Colorado River, is being planned in great detail as a zone for urban development.

the Glenn Oakes Greenbelt on 50 with trails and picnic tables, extend Stacy Park's trail to Town Lake Creek, and beginning the redevelopment of Waller Creek from Tenth Street Lake.

### WALLER CREEK

The Waller Creek project required of consultants to prepare a plan, in summer of 1975 several architectural firms were selected. The resulting plan involved considerations of traffic flow, economic stimulations, zoning patterning problems, biking trails and fair hiking trails, existing trees and green residential possibilities and historic creations, among other concerns. A committee, proposed by the Bicentennial interests and selected by PARD with the consultants in the early stages of the plan. More money was requested in the December 1975 bond election, not including \$1.5 million to Waller Creek's development over the next several years including nearly \$8 million for creek parkland acquisition and development.

Concurrent with the planning of ten blocks of Waller was the development of Symphony Square and Waterloo Park on the adjacent five blocks, an area which had been in the planning stages for several years. Symphony Square embodies all three project areas of the Bicentennial in its restoration of four historic buildings on the creek, accessible by trail north toward the University and south toward downtown, and providing the central city with cultural opportunities previously unavailable in that area.

The University of Texas, encouraged by the student body as well as the city's Bicentennial plans on Waller, began planning for its portion of the creek. The Student Union, the

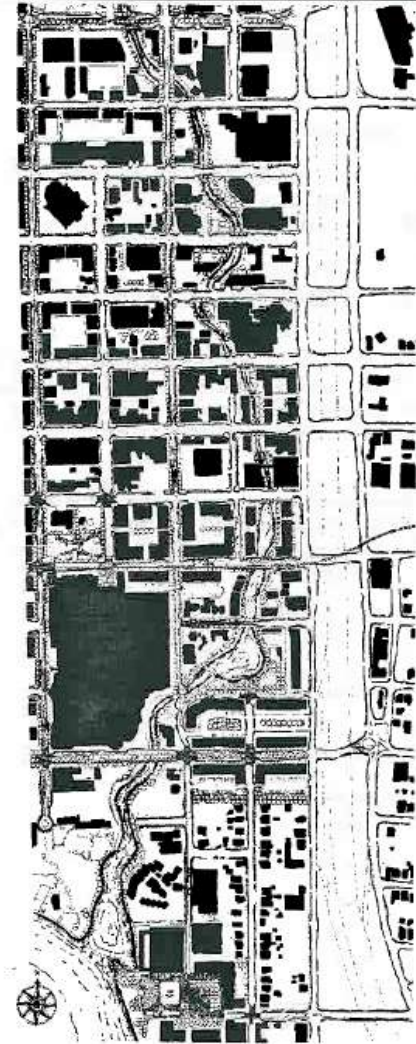




# WALLER CREEK

## CHARRETTE REPORT

1998



STREETS TO BE REDESIGNED

# Waller Creek Greenway Action Plan

Austin, Texas

Action Plan Report

November 2000

Prepared for:  
The Waller Creek  
Greenway Partnership



## Waller Creek Greenway Partnership

### Waller Creek Characteristics

For the purposes of this Greenway study, there are three distinct characters or zones within the Waller Creek Greenway study area.

#### Zone 1: Lower

Town Lake to 5<sup>th</sup> street. This area consists of a fragmented natural landscape that has poor access to the lower water level. Bank erosion is prevalent due to high peak flow and poor maintenance.

#### Zone 2: Middle

Fifth street to 10<sup>th</sup> street. This area has a canyon effect where buildings like the Sheraton Hotel dominate the landscape. Access to the waters of Waller Creek are improved, however much of the stream channel is comprised of human structures.

#### Zone 3: Upper

Tenth street to Waterloo Park. This area blends the natural with the urban conditions that reflect the first two segments. Some of the best examples of good stream architecture are located in this zone (wall treatments, paving, tree wells and spatial qualities of the corridor).

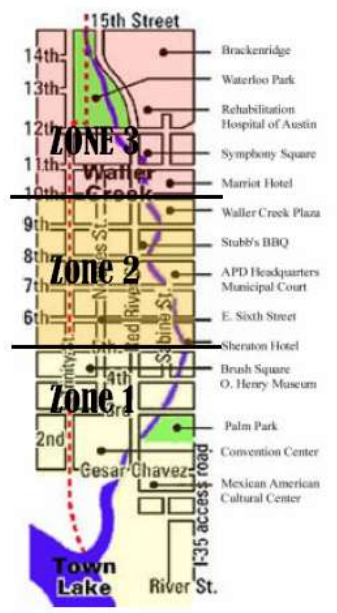
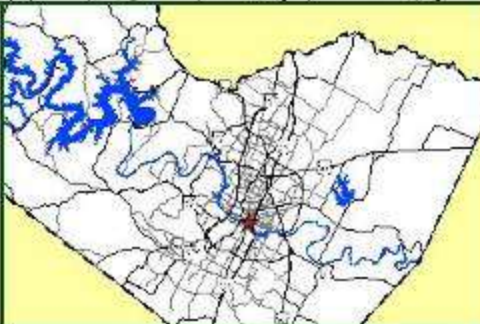
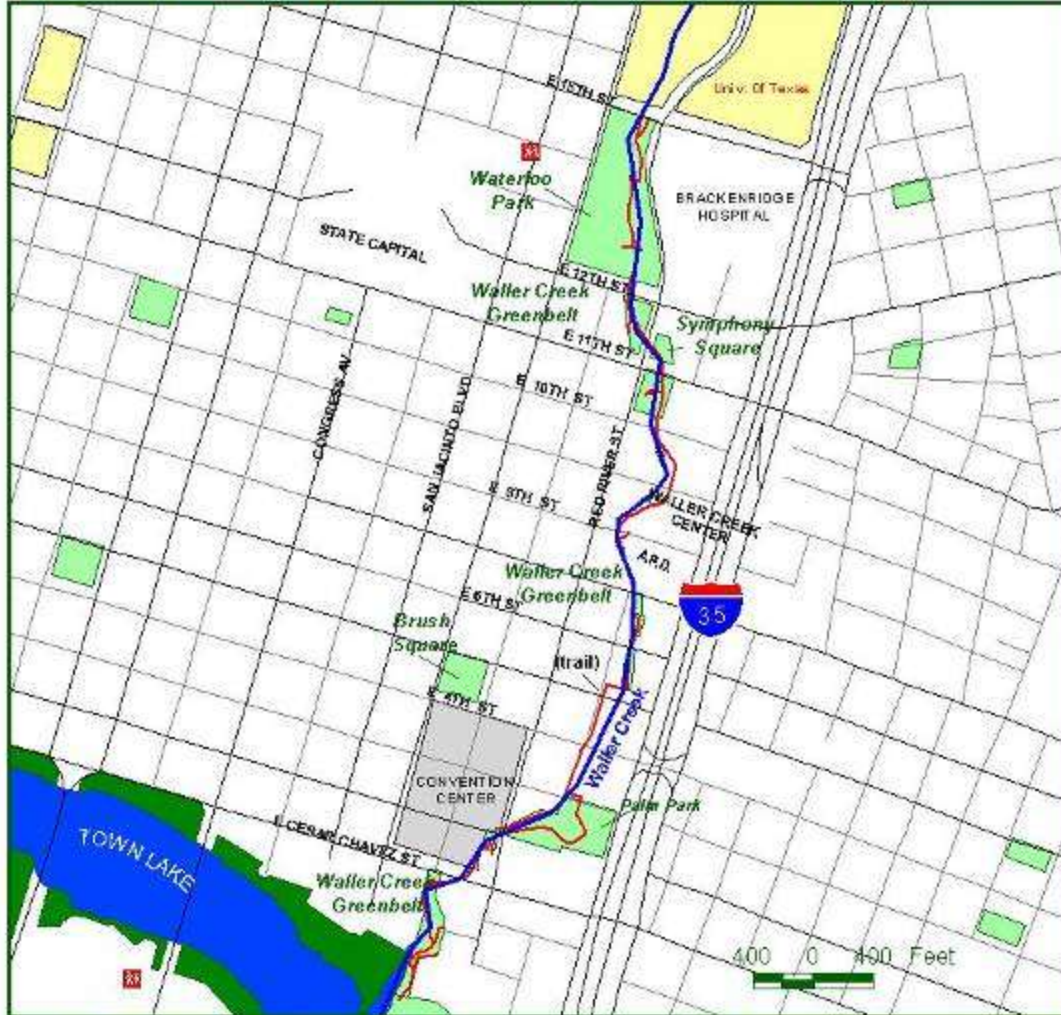
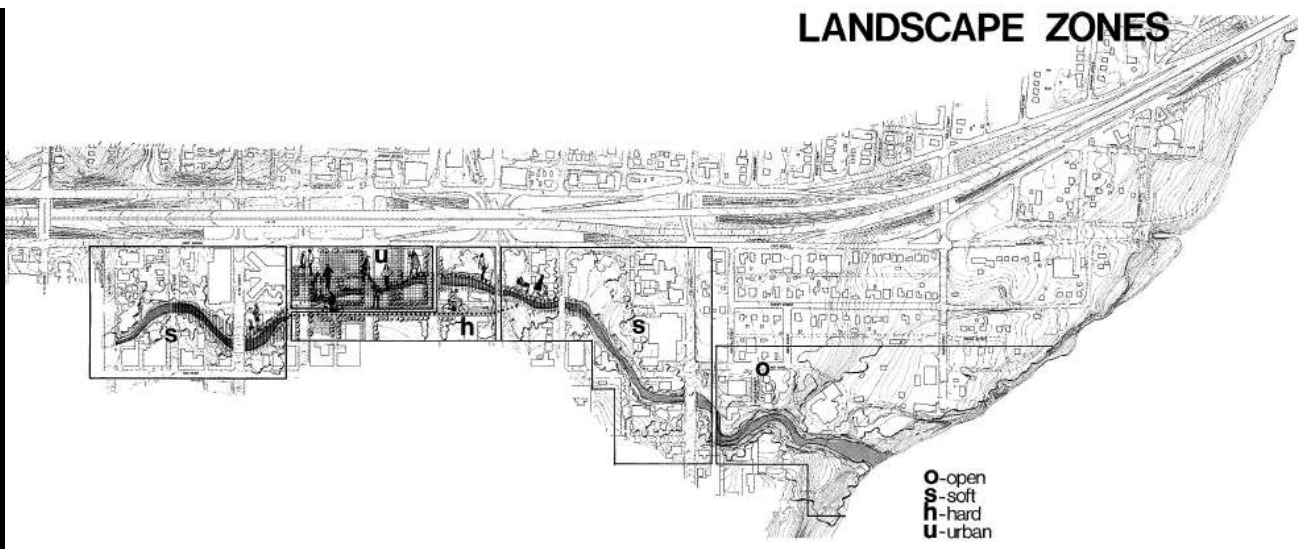


Figure 12: For the purpose of the Greenway study, the consultant has divided Waller Creek into three distinct zones. Zone 1: Lower Creek; Zone 2: Middle Creek; and Zone 3: Upper Creek.





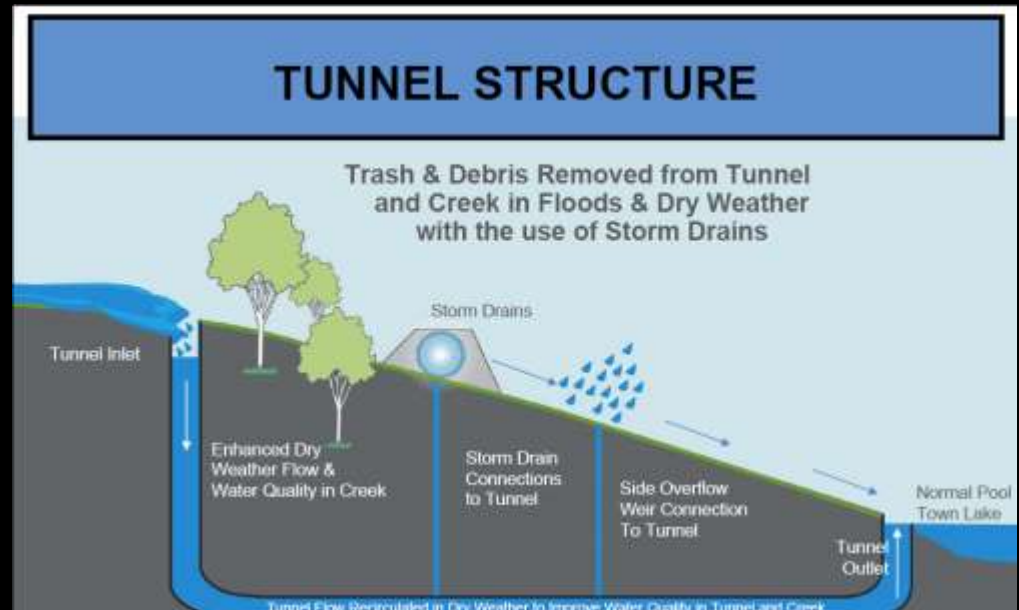
**LANDSCAPE ZONES**



# Waller Creek Tunnel

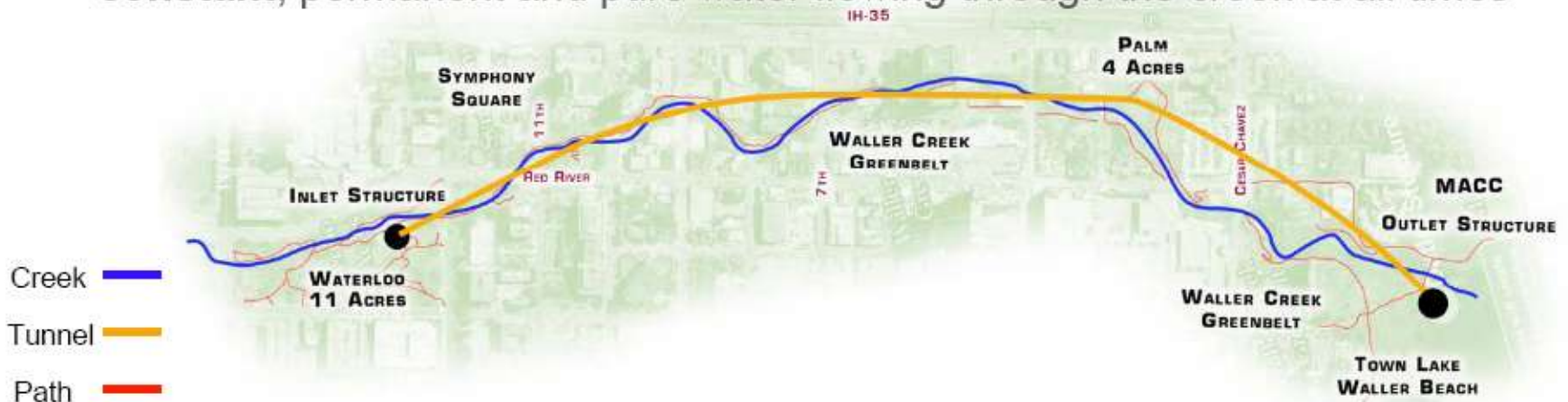
We trust you need no reminding that Lower Waller Creek, from Waterloo Park to Town Lake, is a dump. Or, to pinch a couple of the mayor's favorite phrases, "a running sore" and "an ugly hole in the ground." This is a point that seems conceded by "citizen" and "developer" alike, though their visions of what Waller Creek should look like may vary.




Mike Clark-Madison Austin Chronicle 2002



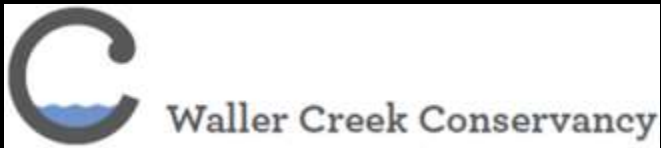
# TUNNEL STRUCTURE

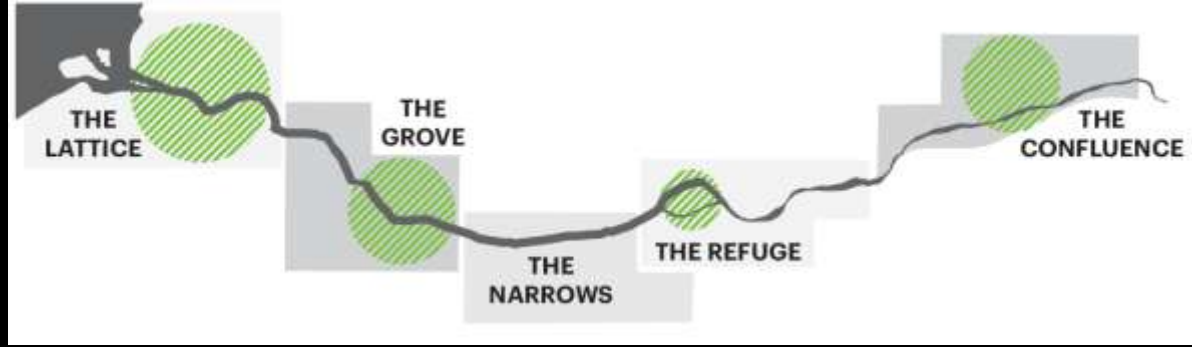
- Waller Creek drainage area is 6 square miles
- Tunnel would be **5,400 feet long, 22 feet in diameter, 70 feet below Sabine Street**
- Water will flow through the tunnel at **16 feet per second**
- Water will be pumped, via the tunnel, from Town Lake keeping **3-4 feet of constant, permanent and pure water** flowing through the creek at all times



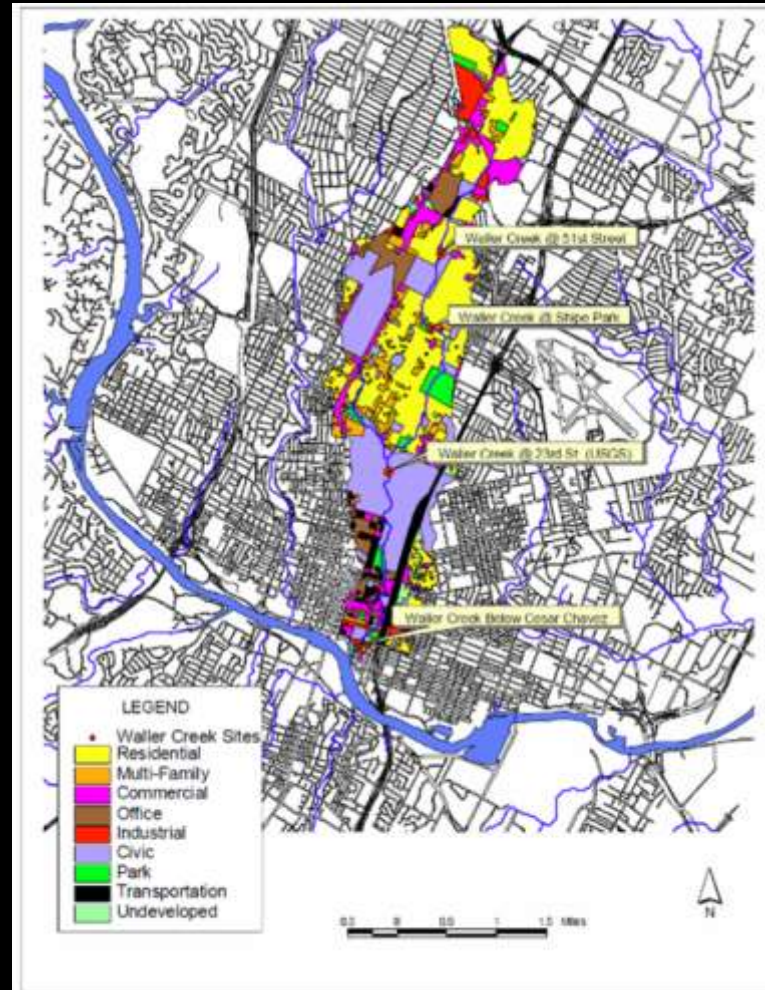
Inlet		5,880 ft long	Outlet	
				







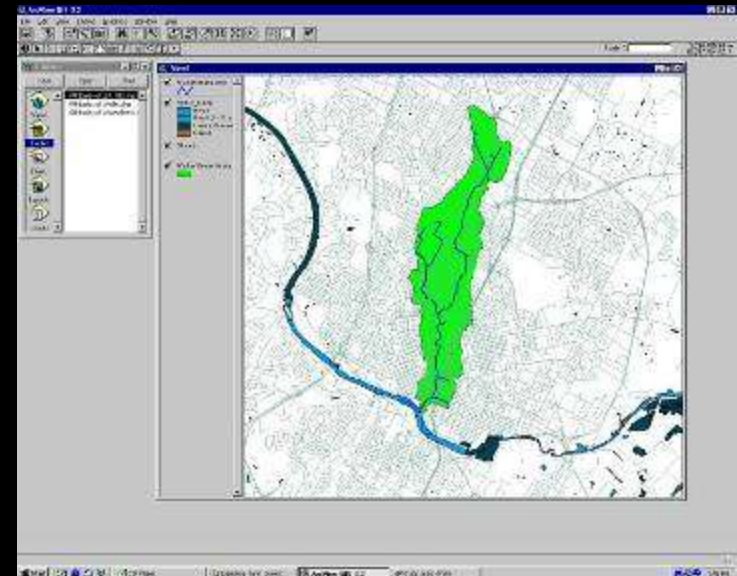
# Knowing Waller Creek?



# Literary Natural History

## “Bedraggled Christmas Stocking”

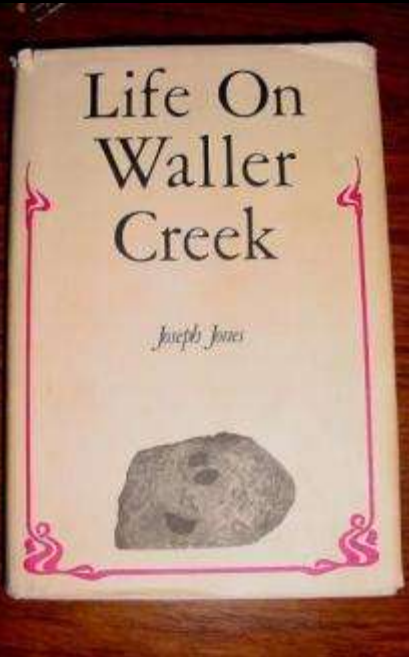
“The outline of its total watershed, to define the perimeters a little more closely, resembles a bedraggled Christmas stocking, loosely and somewhat lumpily filled from top (just south of U.S. Highway 183) to toe (Town Lake).”



# Life on Waller Creek:

A Palaver about History as Pure and Applied Education

Joseph Jones [1982]



Forty years and more I have packed my lunch to Waller Creek.

Only since retirement, though, have I felt I had time to spend undertaking small improvements along its rugged banks: ephemeral gestures to be sure, but good for body and spirit alike – an hour or so, three or four days a week, before lunch.

Instead of going up the wall I go down to the Creek.



## Constructive Meddling

I don't wear a ten-gallon hat, but I do lug along in a five-gallon green plastic bucket the rest of my tools:

machete, (or corn knife, as I knew it in corn country), light sledgehammer, pruning shears, homemade hand pick (patterned after the Polynesian digging stick, which was made from forking tree-branches), and – occasionally – pruning saw and bobbed-off broom-rake.

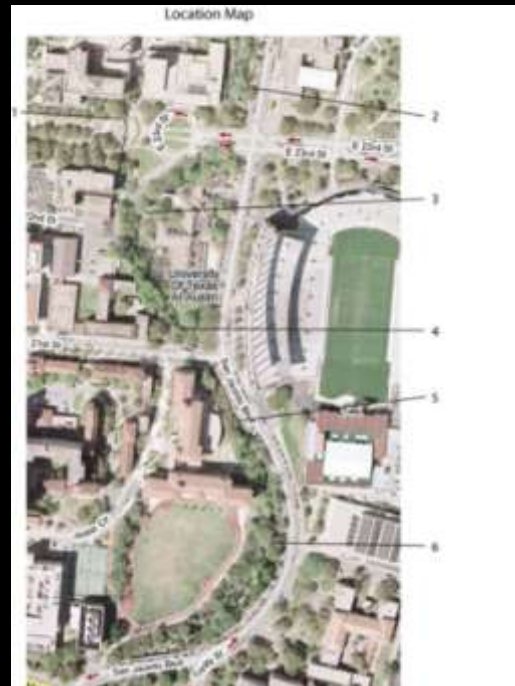


# University of Texas History of Meddling

## Waller Creek Riot

Rapid and often unplanned development, both institutional and domestic, has taken its toll on Waller Creek.

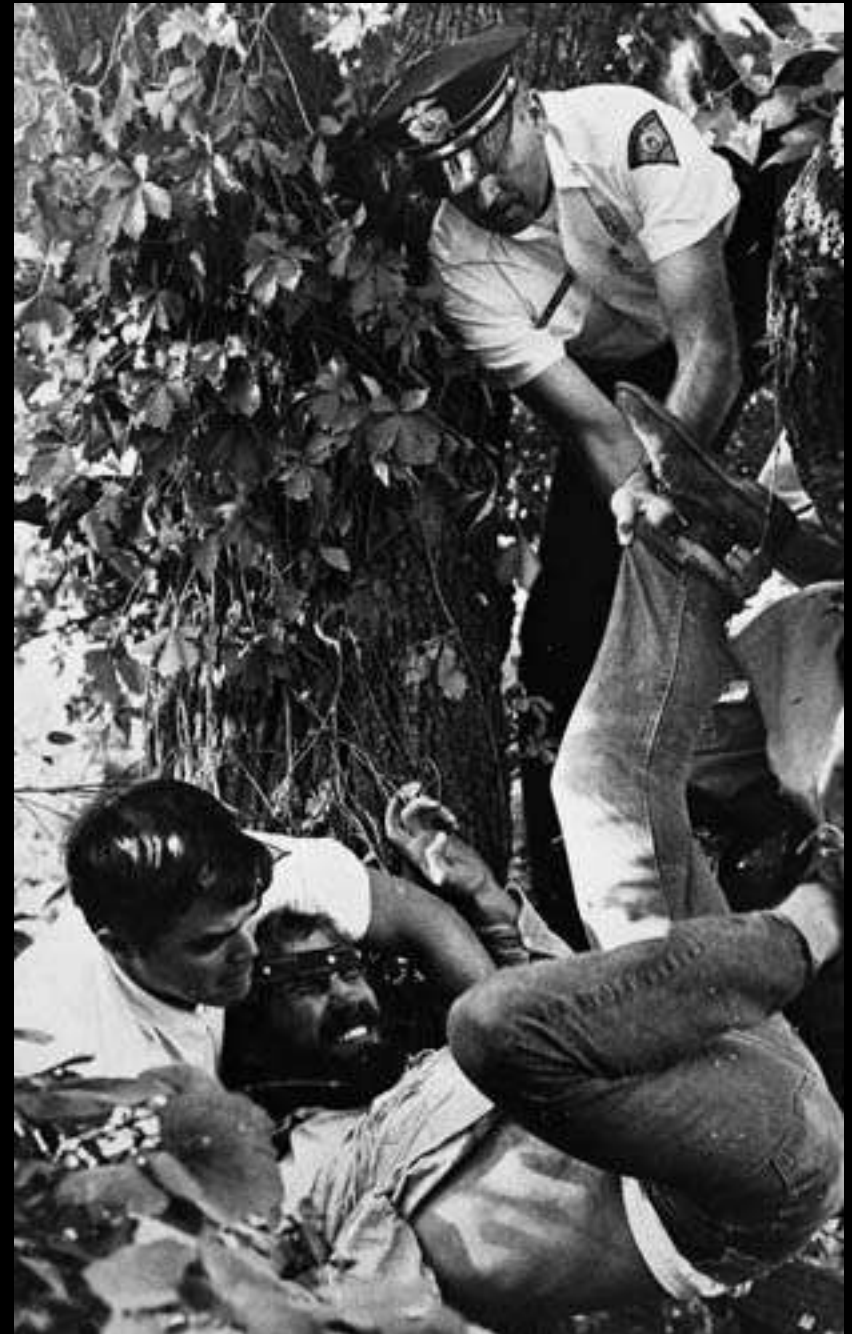
One of the social consequences at the university was the Waller Creek Riot of October 22, 1969, protesting destruction of trees and mutilation of the creekbed along San Jacinto Boulevard south of Twenty-first Street, consequent to plans for the enlargement of Memorial Stadium.





The Waller Creek Riot was touched off when the UT board of regents decided to bulldoze several hundred feet of Waller Creek to expand Memorial Stadium.

In an unsuccessful attempt to stop the bulldozing, student protesters chained themselves to trees; the chancellor of the board of regents, Frank Erwin, complete with hard hat and bullhorn, personally oversaw their arrests.



# University re-engagement with Waller Creek



## “Cretaceous Limestone Gutter”

I would hope also that the reader, if he should tire of being reminded overmuch of what an efficient trash-receiver (up to a point) the Creek has become in our day, will exercise the reader’s privilege of imagining what counterparts to an inventory of the 1970s-80s were almost certainly to be found in Waller Creek pretty steadily after 1839 and indeed even before.

But let him first accept himself as part of the continuum and become his own short-term archeologist: such fugitive creek-things as I will be cataloguing here, when carried and buried, might be thought of as archeology going somewhere to happen.

Thus, for example:

*Plastic beer cups (Brand X with blue map of Texas) in addition to the ever-ongoing deposit of beer cans...A grackle’s reflection as he flies low over a still pool...After a flood, young willows keep reminding us, for many days, “It went that-a-way,”...High-visibility translucent bluish plastic bags – like Portuguese-men-of-war on a Gulf beach, but not biodegradable...scars of the sewer builders, still evident after twenty, twenty-five years...A much-twisted-and-battered yellow umbrella.*



“Cretaceous Limestone Gutter”

Late Pleistocene Fossils  
(500,000-10,000 years before the present)



Homotherium serum  
Scimitar-toothed Cat



Geochelone sp.  
Giant Tortoise

Mammuthus sp.  
301 Congress  
Mammoth



Mammut americanum  
American Mastodon





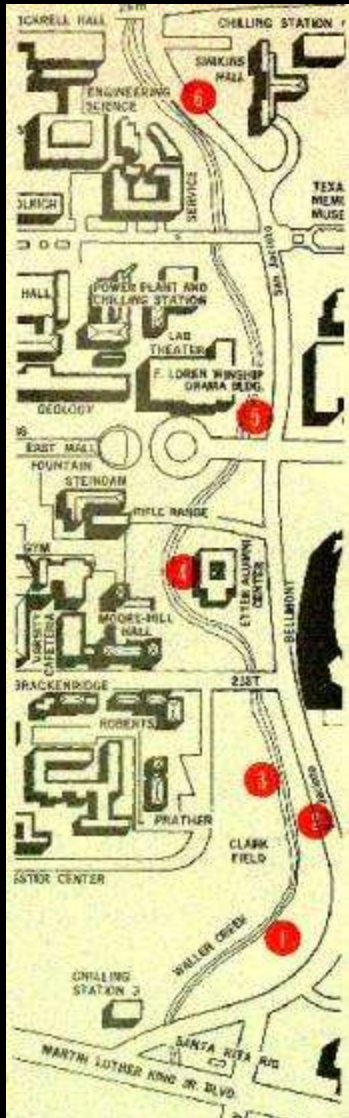


## Waller Creek Wilderness Trails and Adjuncts

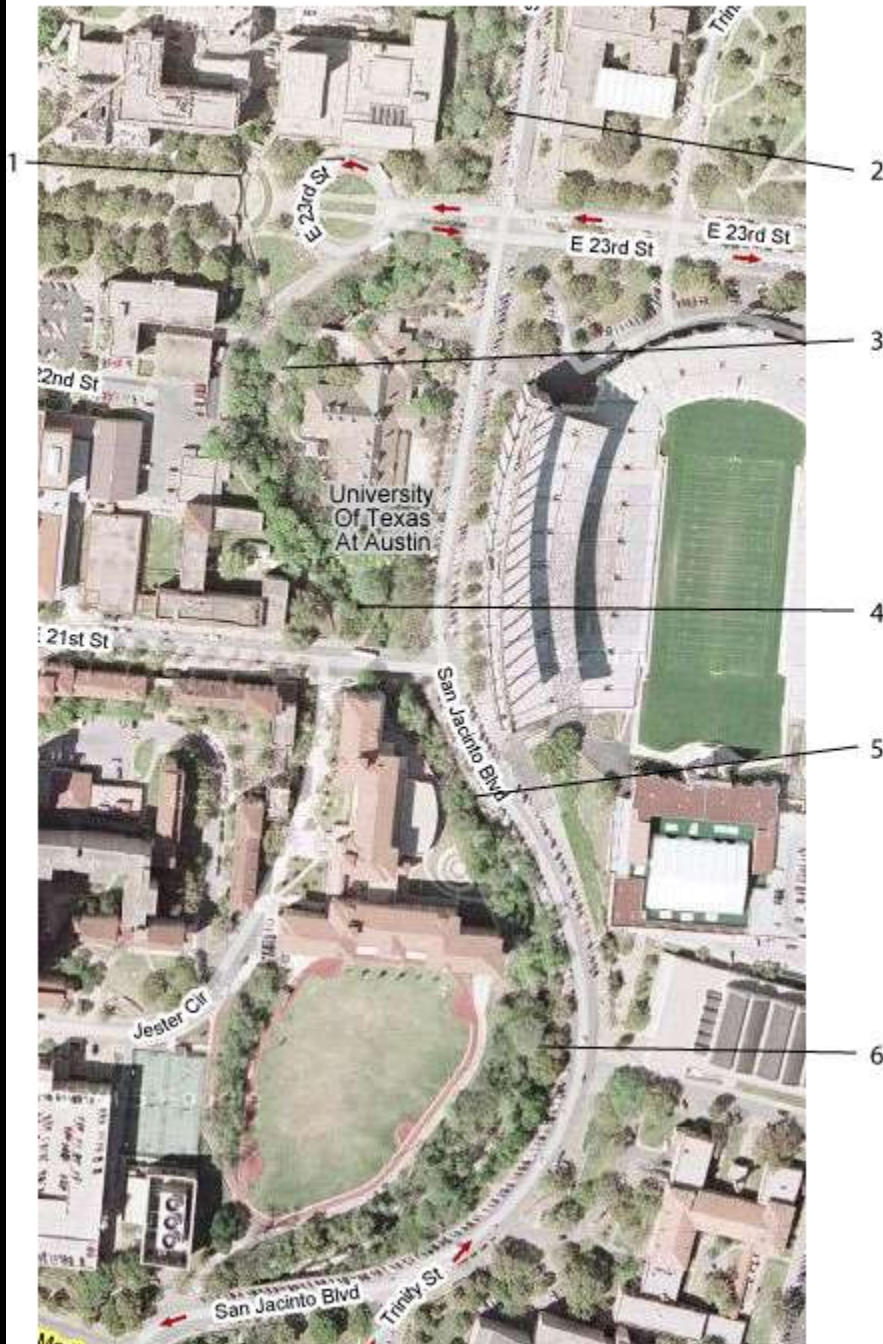


By: S.P. Ellison, Jr., Joseph Jones, and Keith Young  
Prepared for Members of the  
University of Texas at Austin Retired Faculty-Staff Association  
May 10, 1983

<http://www.lib.utexas.edu/geo/fulltext.html>



# Location Map





## Into the Creekbed

Look east -- to the right -- and you will see a sloping bank (muddy in wet weather, brushy and weedy most of the time), which leads down to the remnant of a former flight of cut-stone stairs, washed out in high water.

Step onto native limestone, then cross the current to a large slab of concrete sewer-cover, and once again to the native Austin limestone, (which extends downward for at least 150 feet), on the east bank.



Oaks, elms, cypresses, pecans, and willows, along with one or two ambitious sycamores, are the dominant trees of this area, with vines in profusion invading a fair number of trees to the point of strangulation



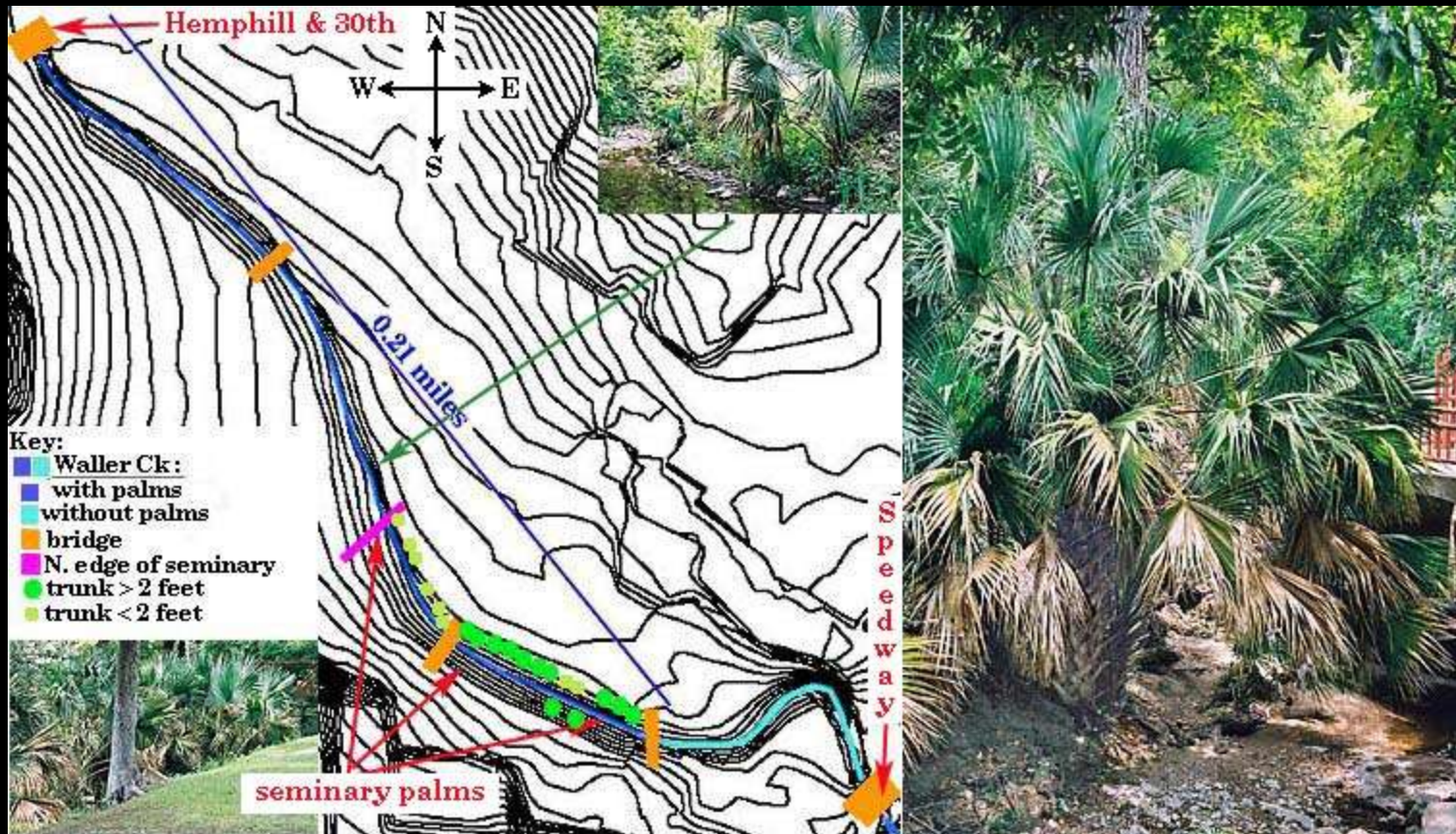
When you reach the 21st St. bridge notice **the palmetto "escape" living** and perhaps slowly growing in the water and gravel just under the west end, downstream side. From here it will be necessary to leave the creek bed (from which the creek is nearly always seen to best advantage)



# Constructive [non-human] Meddling

## The Palms of Waller Creek

Dr. Robert Harms



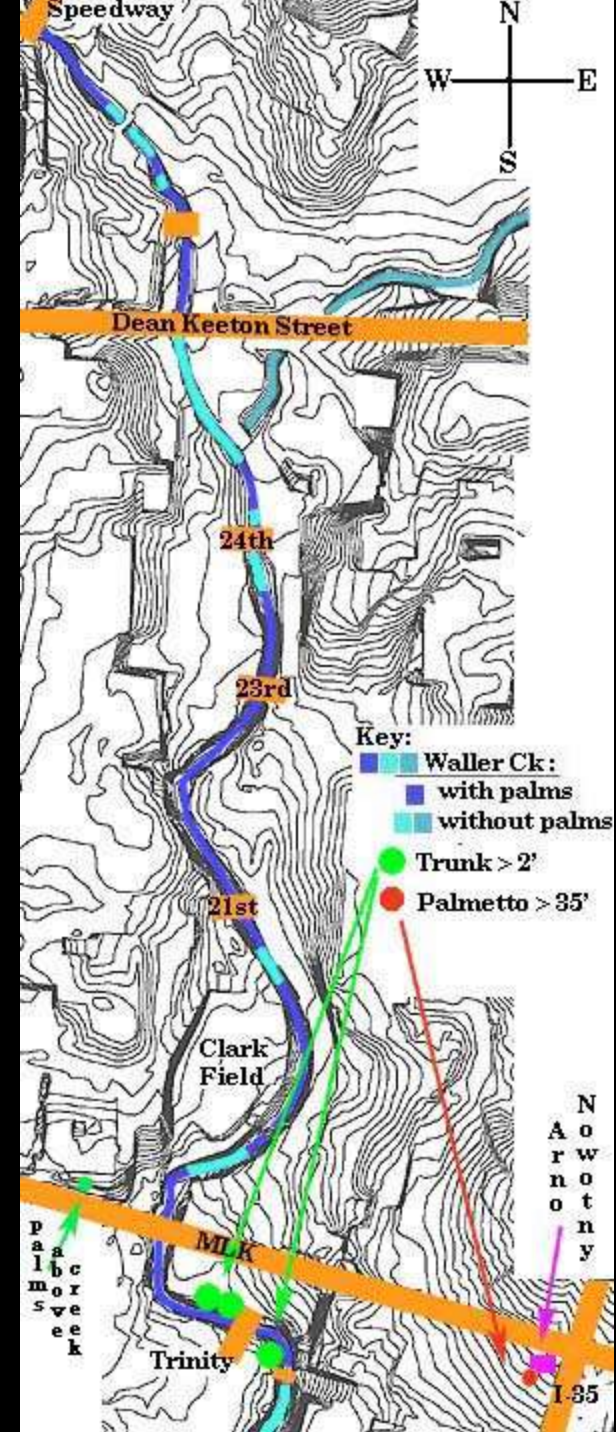
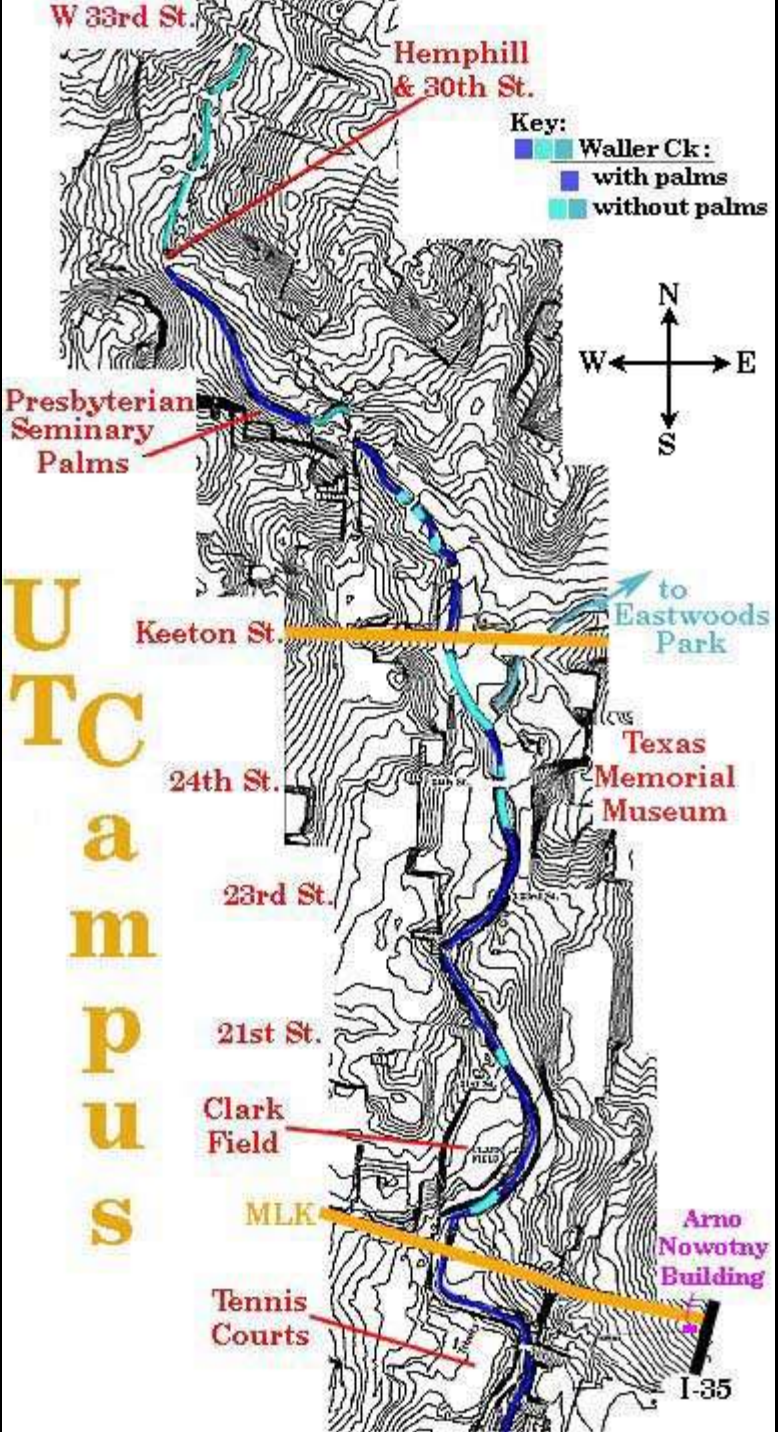
## The Return (?) of Palms to Waller Creek – Dr. Robert Harms

Census of Texas Palmettos (*Sabal mexicana*) along Waller Creek, July 2003

In the summer of 2003 some 400 Texas Palmettos (*Sabal mexicana*; also Rio Grande palmetto) were thriving along Waller Creek between Hemphill Park and the south edge of the UT campus.

When my survey was completed, I had found only Texas Palmettos - no Dwarf Palmettos had turned up. Further, the evidence indicates that all of these are most probably from two sources - (1) palms originally introduced for landscaping at the Austin Presbyterian Seminary north of Speedway and (2) the tall palm beside the Arno Nowotny Building at MLK and I35.













WallerCreekUT.org

## Waller Creek Biota

Photos by Dr. Ed Theriot



Wood Ducks  
at mouth of Waller Creek  
*Aix sponsa*  
January 11, 2004



Longear Sunfish  
at 24th Street Bridge  
*Lepomis macrochirus*  
February 6, 2004



Gray Ducks (Gadwall)  
at mouth of Waller Creek  
*Anas strepera*  
January 11, 2004



American Coot stretching  
*Fulica americana*  
January 11, 2004



Yellow-crowned Night Heron  
at 24th Street Bridge  
*Nycticorax violaceus*  
June 2003



Central Stoneroller  
*Campestris anomalum*  
July 31, 2003



Juvenile Sunfish  
*Lepomis* sp.  
July 31, 2003



Longear Sunfish on nest  
at 24th Street Bridge  
*Lepomis megalotis*  
May 21, 2003



Green Sunfish  
collected at 24th Street Bridge  
*Lepomis cyanellus*  
March 3, 2004

# The Snakes Among Us

Texas Memorial Museum, Texas Natural Science Center

Dr. Travis LaDuc, assistant curator of herpetology for the Texas Natural Science Center, studies water snakes along Waller Creek

Since 2006, LaDuc and others, including current and former students from the university's Vertebrate Natural History course, have been capturing and radio-tagging the snakes in Waller Creek to better understand their biology in our urban ecosystem. Snakes like these are good ecosystem indicators and can help University of Texas at Austin ecologists understand how wildlife are adapting to our urban ways.

Blotched watersnakes (*Nerodia erythrogaster*) are the most common large snakes in the Waller Creek. The only other large species of snake that we have seen in the creek is the non-venomous Texas ratsnakes (*Pantherophis obsoleta*). Small species of snakes seen (infrequently) include the Texas Brown Snake (*Storeria dekayi*) and the Texas Blindsnake (*Leptotyphlops dulcis*). In our 4+ years of intensive surveys, we have never encountered any venomous snakes in the creek, and going back through museum records since 1947, there have been no venomous snakes collected anywhere along Waller Creek.



# Knowing Waller Creek



Monitoring site  
Waller Center  
10<sup>th</sup> Street





Central Stoneroller  
(*Campostoma anomalum*)



Green Sunfish  
(*Lepomis cyanellus*)



Longear Sunfish  
(*Lepomis macrochirus*)

Monitoring site  
Waller Creek at Ladybird Lake



# Waller Creek Mouth















# Macroinvertebrates



# Natural History

Understanding whole organisms in context

Scientific - Ecological understanding shaped by cultural contexts

Literary - Cultural understanding shaped by ecological contexts

Nonhumans – Objects and Subjects



"The idea of nature contains, though often unnoticed, an extraordinary amount of human history."

Raymond Williams, "Ideas of Nature"



# Knowing Waller Creek

Nonhuman Understanding

To explore Waller Creek and environs is to live intensively in the modern world and at the same time to be aware of how brief an instant modernity has been with us; how brief an instant, indeed, the human presence has been here in any guise to contemplate a very old set of surroundings. ..

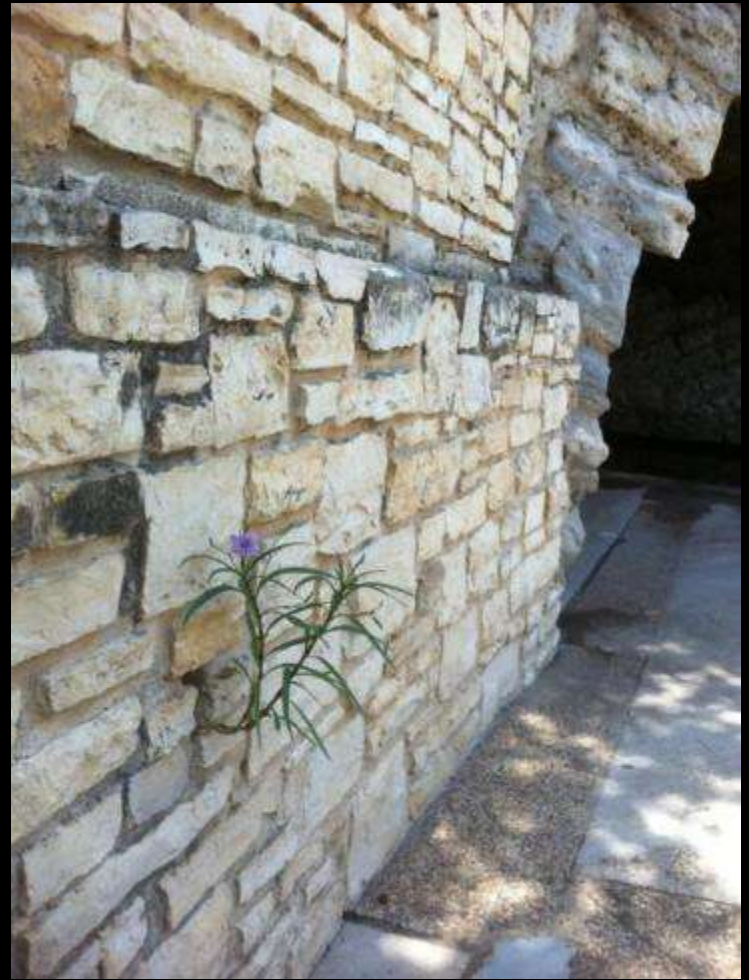
Joseph Jones





The Creek, if we will only let it, will keep reminding us of all this at the same time it offers us other gifts; solitude or limited companionship as needed and wanted; earth, air, and water in slow procession and interaction under the radiant presence of fire; plants and animals living or present in fossil forms...

Joseph Jones



...sounds kind to the ear; color, line, mass, and texture both natural and manmade in luxurious profusion; unhasty alteration within encompassing continuity; the gradual submission of mind and body to easy yet powerful rhythms not elsewhere to be felt – a place where, as Izaak Walton liked to say, we may “study to be quiet.”

Joseph Jones





Applause!

# Questions?

