



## MEMORANDUM

TO: Dave Anderson, Chair, and Members of the Environmental Board

FROM: Marilla Shepherd, Environmental Board Liaison

DATE: August 20, 2008

SUBJECT: EII Scores information in packet

This is to advise you that the EII Score information is in your packet for the September 10, 2008 Environmental Board agenda.

We are sending this information to for you to keep, and review on a regular basis.

If you have any questions, please contact Ingrid McDonald at 512-974-2711.

Thank you,

*Ms*

Ms/ms

Link to Watershed Fact sheets

[http://www.cityofaustin.org/watershed/learn\\_ws.htm](http://www.cityofaustin.org/watershed/learn_ws.htm)

08-20-08 agenda item 5b



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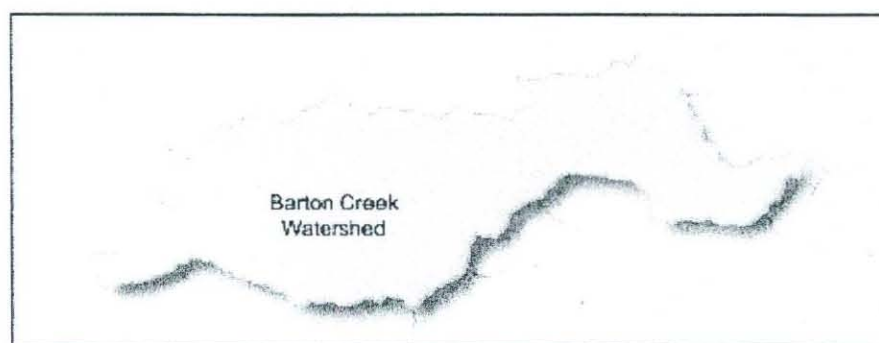
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## Austin's Watersheds


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### Fast Facts

Population	2000: 35,792	
	2030: 52,000	
Creek Length	49.46 miles	
Drainage Area	108.65 square miles	
Drains To	Colorado River at Town Lake	
Well Known Sites	Zilker Park, Barton Springs Pool, Barton Hills Elementary School, Gus Fruh District Park, Village of Bee Cave, Barton Creek Greenbelt	
Land Use	Residential	7%
	Business	1%
	Civic	0%
	Parks	10%
	Roadways	2%
	Undeveloped	79%

### Watershed Facts

- The Barton Creek watershed is over three times the size of all other watersheds draining into Town Lake.
- The city's longest greenbelt trail system is located along Barton Creek.
- There are 60 springs and 20 caves in the Barton Creek Watershed.  
Barton Springs is the major discharge point for the Edward's Aquifer and habitat for the Barton Springs salamander, a protected endangered species.
- Barton Creek is often used as a comparison creek for other watersheds because it has the least development (11%) and ecological impairment.
- Eight square miles of the watershed are in the Edwards Aquifer Recharge Zone where water travels through caves and sinkholes to "recharge" the aquifer; another 112 square miles are in the contributing zone, where water travels over land to the creeks of the recharge zone.
- City staff finds limited baseflow at most monitoring sites along Barton Creek
- For More information on Barton Creek, look at the Barton Creek Report!

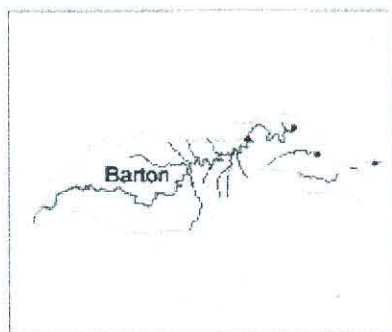
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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	87	Very Good	Barton ranks 1 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	76	Very Good	Water quality is above average
<b>Sediment Quality</b>	70	Good	PAHs are high in some downstream areas, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	96	Excellent	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	97	Excellent	Litter is not a problem, no odor
<b>Habitat</b>	89	Excellent	All components of the habitat index are very good to excellent
<b>Aquatic Life</b>	89	Excellent	Benthic macroinvertebrate community is very good; diatom community is excellent

- Conservation easements and acquisitions preserving undeveloped land will contribute to protection of current water quality.
- Portions of Barton Creek are on the State Water Quality Inventory as being of concern for depressed dissolved oxygen and contaminants in sediment.



Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality	
Monitoring Sites	Marginal
Excellent	Poor
Very Good	Bad
Good	Very Bad
Fair	No Score

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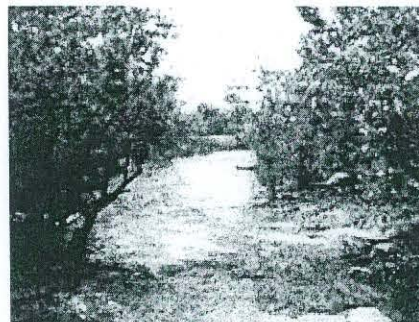
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### Photo Gallery



Barton Creek at Lost Creek Blvd.



Barton Creek at Shield Ranch

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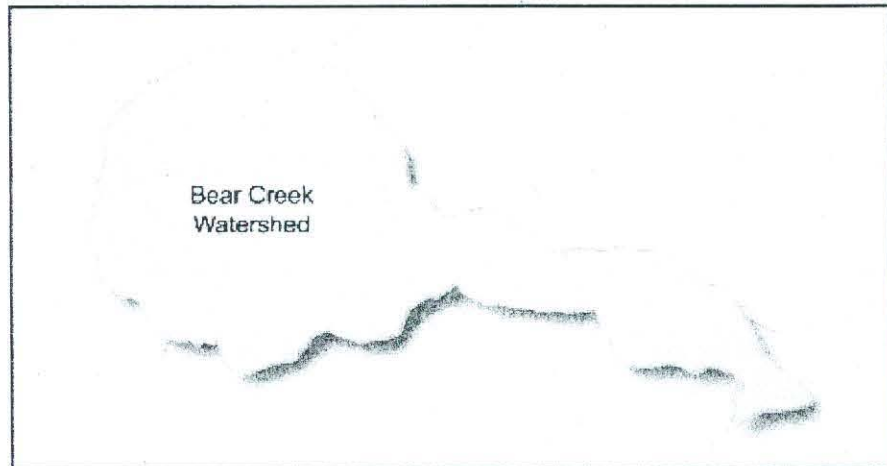
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## Austin's Watersheds



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### Fast Facts

<b>Population</b>	2000: 5,419	
	2030: 31,009	
<b>Creek Length</b>	17 miles	
<b>Drainage Area</b>	27 square miles	
<b>Drains To</b>	Onion Creek	
<b>Well Known Sites</b>	Southland Oaks Park, Hays County Ranch, Spillar Ranch	
<b>Land Use</b>	Residential	10%
	Business	0%
	Civic	0%
	Parks	0%
	Roadways	1%
	Undeveloped	89%

### Watershed Facts

- A portion of the Bear Creek watershed is located in the environmentally sensitive Edwards Aquifer Recharge Zone (Barton Springs Segment) where water travels through caves and sinkholes to "recharge" the aquifer.
- The City of Austin has purchased several tracts of land in the Bear Creek watershed to help protect recharge features and preserve water quality.
- Dye trace studies have been conducted on Bear Creek watershed to help identify groundwater flow paths; a dye trace from a sinkhole on Spillar Ranch at Mopac and Texas 45 reached Barton Springs in 3-4 weeks.
- Significant caves in the Bear watershed include Flint Ridge Cave which has a surface drainage area of 100 ac.
- Springs on the former Spillar Ranch and on the City-owned Hays County Ranch provide year-round watering holes for wildlife along the Recharge Zone.

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### Creek Assessments

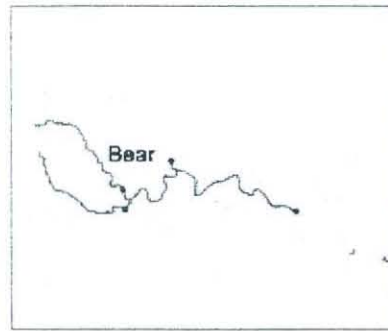
#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	75	Good	Bear ranks 6 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	60	Fair	Water quality is average, ammonia is high
<b>Sediment Quality</b>	82	Very Good	PAHs are very low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	88	Excellent	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	91	Excellent	Litter is not a problem, no odor
<b>Habitat</b>	62	Fair	All components of the habitat index are good to excellent
<b>Aquatic Life</b>	68	Good	Benthic macroinvertebrate community is good, diatom community is good

- Residential development along the SH45 corridor may impact future water quality.
- The City has purchased Water Quality Protection lands which will remain undeveloped in order to protect water quality.

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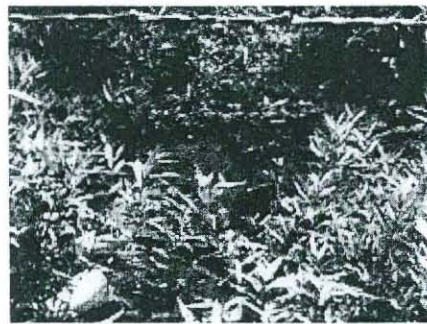


Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
● Monitoring Sites	■ Marginal	■ Poor	■ Bad
■ Excellent	■ Very Good	■ Good	■ Very Bad
■ Fair	■ No Score		

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### Photo Gallery



Bear Creek at Twin Creeks Road



Bear Creek below FM 1826

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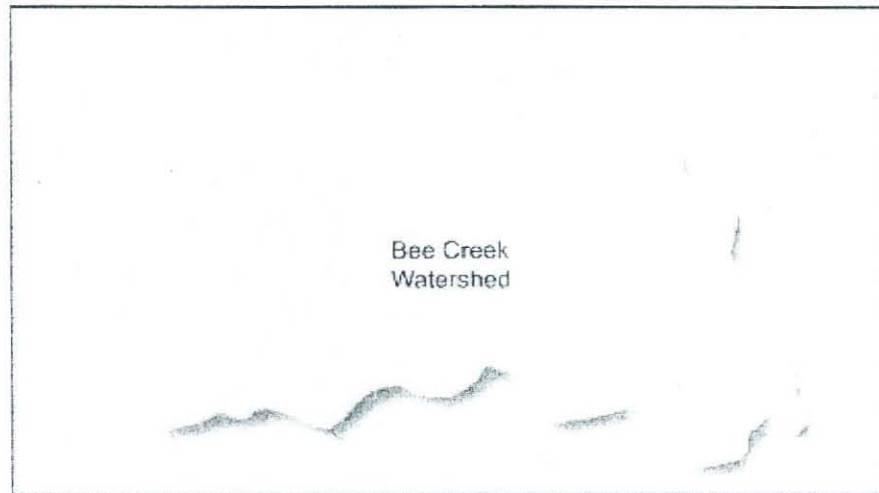
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### Fast Facts

<b>Population</b>	2000: 2,037	
	2030: 10,984	
<b>Creek Length</b>	3 miles	
<b>Drainage Area</b>	13 square miles	
<b>Drains To</b>	Colorado River to Lake Austin	
<b>Well Known Sites</b>	Westlake Hills	
	Residential	35%
	Business	3%
	Civic	1%
	Parks	19%
	Roadways	9%
	Undeveloped	24%
<b>Land Use</b>		



### Watershed Facts

- Bee Creek watershed drains to the environmentally sensitive Edwards Aquifer Recharge Zone where water travels through caves and sinkholes to "recharge" the aquifer.
- The creek runs through Wild Basin Preserve then on through Westlake Hills before entering Lake Austin.
- Wild Basin Ledge Spring in Wild Basin Ledge forms a nice swimming hole in the middle of Westlake Hills.
- Waterfalls along Bee Creek are so beautiful that in 1975 one landowner would not allow anyone to take a picture for fear publicity would bring sightseers
- Bee Creek has 15% impervious cover, which makes it fairly undeveloped compared to creeks the same distance from downtown Austin.

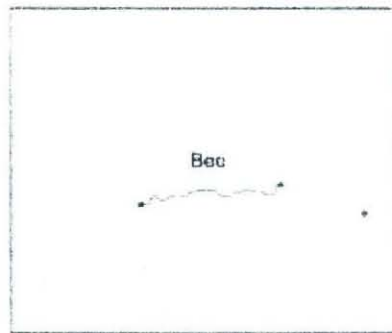
### Creek Assessments

#### Environmental

Index	Score	Category	Notes
Overall Score	75	Good	Bee ranks 6 out of 46 watersheds in overall quality
Water Chemistry	59	Fair	Water quality is average, ammonia is high, nitrate is high, conductivity is high
Sediment Quality	94	Excellent	PAHs are very low, herbicides/pesticides are very low, metals are very low
Recreation	87	Very Good	Bacterial levels are not a threat during non-rainy periods
Aesthetics	89	Excellent	Litter is not a problem, no odor
Habitat	52	Fair	Some sediment deposition
Aquatic Life	67	Good	Benthic macroinvertebrate community is good, diatom community is excellent

- Invertebrate species of concern may be found in the Karst features of the Bee Creek watershed.
- High nitrates and conductivity may be attributed to groundwater impacts from springs
- Commercial construction in headwaters upstream of Loop 360 may contribute to increased sediment deposition
- Presence of pollution-intolerant diatom species suggest healthy community

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality	
Monitoring Sites	Marginal
Excellent	Poor
Very Good	Bad
Good	Very Bad
Fair	No Score

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### Photo Gallery



Bee Creek at Loop 360



Bee Creek at Lake Austin

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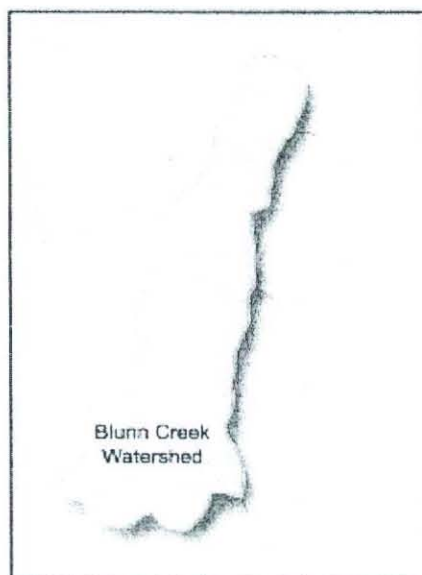
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## Austin's Watersheds


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**Blunn Creek  
Watershed**

### Fast Facts

<b>Population</b>	2000: 6,000
	2030: 6,810
<b>Creek Length</b>	3 miles
<b>Drainage Area</b>	1 square mile
<b>Drains To</b>	Colorado River at Town Lake
<b>Well Known Sites</b>	St. Edwards University, Blunn Creek Wilderness Park, Stacy Pool, Travis Heights Elementary School
<b>Land Use</b>	Residential 30%
	Business 15 %
	Civic 21 %
	Parks 8 %
	Roadways 17 %
	Undeveloped 10 %

### Watershed Facts

- Blunn Creek, in South Austin, consistently has better overall water quality than most urban creeks and is a highly valued neighborhood resource.
- There are six springs which feed Blunn Creek.
- Stacy Pool is fed by well water warmed by the heat of the earth.
- Blunn Creek usually becomes dry from July to October, despite supplemental flow from springs located in the Blunn Creek Nature Preserve and discharge from Stacy Pool.
- In response to citizen calls, investigators find an average of 13 pollution spills each year; the most common spill type is sewage, followed by sediment and petroleum.
- Nitrate levels in 2000 were consistently high throughout the year; with the highest concentrations at the Nature Preserve
- Fecal coliform concentrations were above state standards at three of four sites in 2000\*. (2001 Water Watchdogs EII Phase 1 Watersheds Report (monitoring conducted in 2000))
- Report on Blunn Creek

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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	61	Fair	Blunn ranks 26 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	49	Marginal	Water quality is average, conductivity is high
<b>Sediment Quality</b>	71	Good	PAHs are high, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	62	Fair	During dry weather conditions, bacteria is usually not a threat
<b>Aesthetics</b>	74	Good	Some litter is present, no odor, algae cover is moderate, some of the creek bed is dry
<b>Habitat</b>	66	Good	Increased sediment deposition
<b>Aquatic Life</b>	41	Marginal	Benthic macroinvertebrate community is marginal; diatom community is poor

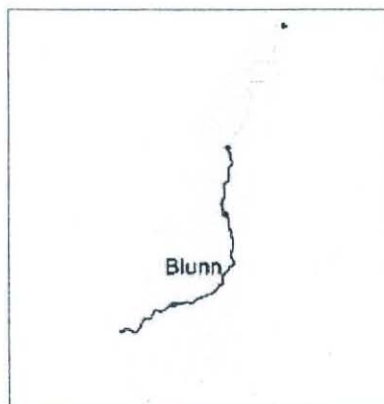
- Aesthetics scores declined in Blunn more than other watersheds in the City.
- High nutrients and conductivity may be attributed to groundwater impacts from springs and residential fertilizer use.



- Staff research indicates the source of high PAH levels may be parking lot sealants.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality	
● Monitoring Sites	Marginal
■ Excellent	Poor
■ Very Good	Bad
■ Good	Very Bad
■ Fair	No Score

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### Photo Gallery



Blunn Creek at Willow Run



Blunn Creek at Riverside Drive

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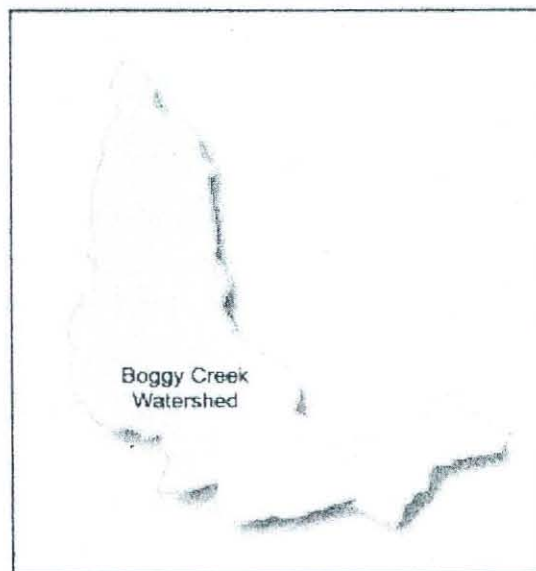
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### Austin's Watersheds



Boggy Creek  
Watershed

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#### Fast Facts

<b>Population</b>	2000: 23,372	
	2030: 35,728	
<b>Creek Length</b>	8 miles	
<b>Drainage Area</b>	6 square miles	
<b>Drains To</b>	Colorado River below Town Lake	
<b>Well Known Sites</b>	Oakwood Cemetery, Zaragoza Park, Johnston High School, Garza High School, Kealing Middle School	
<b>Land Use</b>	Residential	34%
	Business	15%
	Civic	7%
	Parks	4%
	Roadways	26%
	Undeveloped	14%

### Watershed Facts

- Several miles of Boggy Creek have been channelized with cement, changing the character of the creek from narrow and winding to wide, straight and shallow.
- Areas that have not been channelized have extremely eroded banks with debris and trash in the creek channels.
- In response to citizen complaints, City investigators find an average of 78 pollution problems each year in Boggy Creek. Sewage is the most common problem, followed by petroleum and then trash.
- In 1994, residents in the Boggy Creek watershed won a major environmental victory, shutting down polluting tank farms in their neighborhoods.
- A major project by the U.S. Army Corps of Engineers provided 100-year floodplain protection to 1700 homes in 1984
- Fecal coliform levels were above the recreational state limit in 2000
- Restoring Boggy Creek

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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	58	Fair	Boggy ranks 31 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	57	Fair	Water quality is average
<b>Sediment Quality</b>	88	Excellent	PAHs are very low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	63	Good	During dry weather conditions, bacteria is usually not a threat
<b>Aesthetics</b>	63	Good	Lots of litter present, slight offensive odors, algae covers 10-20% of creek, some of the creek bed is dry
<b>Habitat</b>	49	Marginal	Increased sediment deposition, cover is insufficient, major channel alteration, buffer zone is small
<b>Aquatic Life</b>	30	Poor	Benthic macroinvertebrate community is poor; diatom community is poor

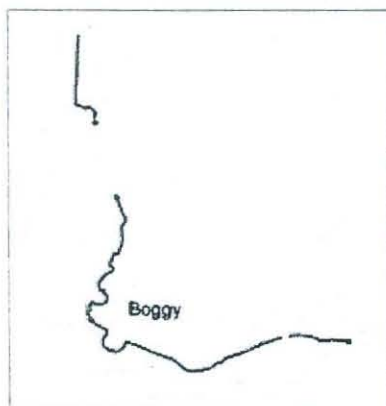
- Aquatic life impacted by habitat loss from channel alteration, erosion and sedimentation.
- Austin Clean Water Program is working on rehabilitation of wastewater lines that may be the cause of periodically elevated bacteria.



- Channel modifications may have resulted in impacts downstream of U.S. 183.
- Erosion downstream of extensive channelization reducing bank stability and causing sedimentation.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
● Monitoring Sites	■ Excellent	■ Very Good	■ Good
	■ Fair	■ Marginal	■ Poor
		■ Bad	■ Very Bad
			■ No Score

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### Photo Gallery



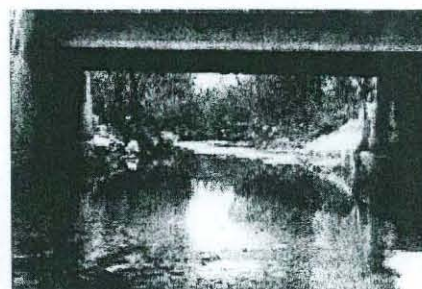
Boggy Creek at Delwau Lane



Boggy Creek at Delwau Lane

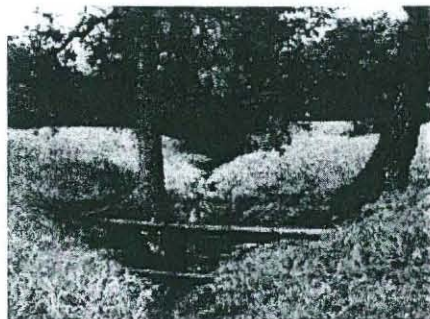


Boggy Creek at Delwau Lane

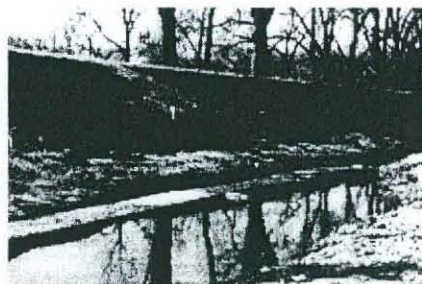


Boggy Creek at Delwau Lane





Boggy Creek at Airport Road



Boggy Creek at Nile Street

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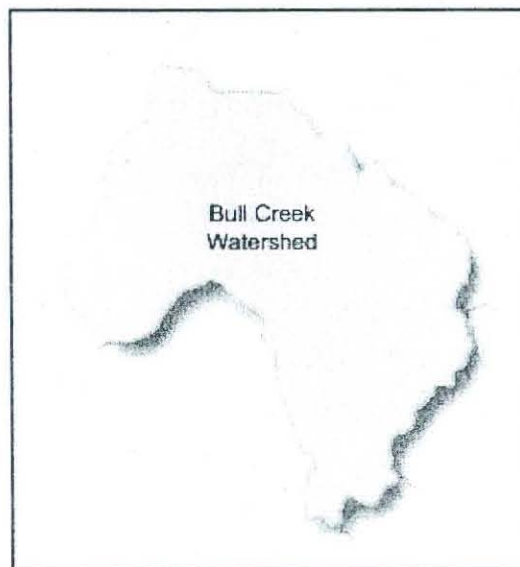
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## Austin's Watersheds



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### Fast Facts

Population	2000: 43,709	
	2030: 69,716	
Creek Length	11 miles	
Drainage Area	25 square miles	
Drains To	Colorado River at Lake Austin	
Well Known Sites	North Cat MountainPark, Stillhouse Hollow Springs, 3M	
	Austin Headquarters, St. Edward's Park, Bull Creek Park, The Arboretum	
Land Use	Residential	33%
	Business	5%
	Civic	1%
	Parks	11%
	Roadways	9%

Undeveloped

41%

### Watershed Facts

- A famed Texas Ranger, Richard Lincoln Preece, killed the last buffalo in Travis County on the banks of Bull Creek, giving the creek its name.
- Archaeological sites indicate that the Bull Creek watershed has been inhabited for thousands of years.
- Early occupants settled around the area's many springs. Box Spring, for example, was named for a cedar box that Native Americans used to filter sediment from the creek to produce clear drinking water.
- This watershed is habitat for several endangered species, including the golden-cheeked warbler and the black-capped vireo.
- In response to citizen complaints, investigators find an average of 33 pollution problems each year. Sewage is the most common problem, followed by petroleum and then sediment.
- In response to high nitrate levels at Stillhouse Hollow Springs in the Bull Creek Watershed, the City has begun a pilot program aimed at educating the more than 250 residents in the area on environmentally- responsible fertilizing practices; a companion study sponsored by the City of Austin and conducted by Texas A&M resulted in lowering the recommended fertilizer application rates by 75% statewide.
- The watershed has a very active citizen group interested in protecting their creek. Visit [www.bullcreek.net/](http://www.bullcreek.net/)
- Report on Bull Creek

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### Creek Assessments

#### Environmental

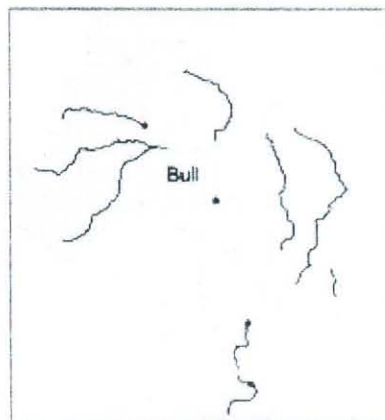
Index	Score	Category	Notes
<b>Overall Score</b>	72	Good	Bull ranks 8 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	55	Fair	Water quality is average, nitrate is high, conductivity is high
<b>Sediment Quality</b>	65	Good	PAHs are very high, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	90	Excellent	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	89	Excellent	Litter is not a problem, no odor
<b>Habitat</b>	52	Fair	Some sediment deposition, some channel alteration

<b>Aquatic Life</b>	80	Very Good	Life Benthic macroinvertebrate community is excellent, diatom community is good
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- Benthic macroinvertebrate data indicate that Bull Creek is of high aquatic life use by state evaluation methods; presence of pollution-intolerant diatom species suggest healthy community.
- Elevated levels of PAHs in sediment may be harmful to aquatic life; sediment scores declined in Bull more than other watersheds in the City.
- High nitrates and conductivity may be attributed to groundwater impacts from springflow, leaking wastewater lines and residential fertilizer use.
- Increased sediment deposition due to recent construction impacts.
- Portions of Bull Creek are listed on the State Water Quality Inventory as being of concern for nitrate/nitrite enrichment.
- Rapid commercial and residential construction impacting formerly intact headwater areas.
- Staff research indicates the source of high PAH levels may be from parking lot sealants.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
● Monitoring Sites	■ Excellent	■ Very Good	■ Good
■ Fair	■ Marginal	■ Poor	■ Bad
	■ Very Bad	■ No Score	

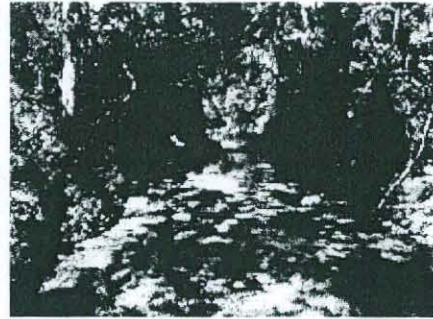
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Bull Creek at St. Edwards  
park above dam



Bull Creek above tributary 7



Bull Creek at St. Edwards  
park above dam

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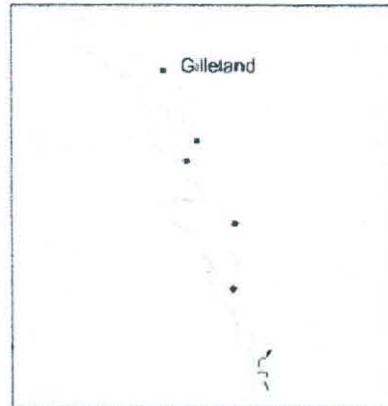
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being of concern for ammonia and nitrate/nitrite enrichment.

- Silt and sedimentation may be impacting aquatic life.
- Wastewater effluent discharge and increasing residential development contributing to elevated nutrient and solids concentrations.
- Wastewater treatment plant discharges artificially enhance biological communities and contribute to poorer water quality conditions.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
● Monitoring Sites	■ Excellent	■ Very Good	■ Good
■ Fair	■ Marginal	■ Poor	■ Bad
	■ Very Bad	■ No Score	

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### Photo Gallery



Gilleland Creek at the  
South Railroad Ave.



Gilleland Creek at Hill Cemetery



Gilleland Creek at 973

Gilleland Creek at 969

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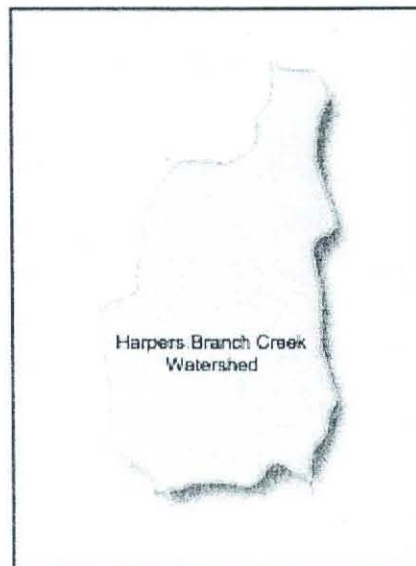
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## Austin's Watersheds


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### Fast Facts

<b>Population</b>	2000: 2,963	
	2030: 3,316	
<b>Creek Length</b>	1 mile	
<b>Drainage Area</b>	1 square mile	
<b>Drains To</b>	Colorado River at Town Lake	
<b>Well Known Sites</b>	Travis High School, Texas Railroad Commission, Off-leash dog park at Riverside Dr and I-35	
<b>Land Use</b>	Residential	47%
	Business	15%
	Civic	3%
	Parks	0%
	Roadways	32%
	Undeveloped	3%



### Watershed Facts

- Highly impacted by urbanization, this creek has lost much of its natural character.
- Harper's Branch is the smallest of the City's urban watersheds, with a drainage area of only one square mile.
- Nitrate levels were elevated in 2000\* \*?2001 Water Watchdogs EII Phase 1 Watersheds Report (monitoring conducted in 2000)
- Fecal coliform levels were above the state standard in 2000\*.  
\*(2001 Water Watchdogs EII Phase 1 Watersheds Report (monitoring conducted in 2000))

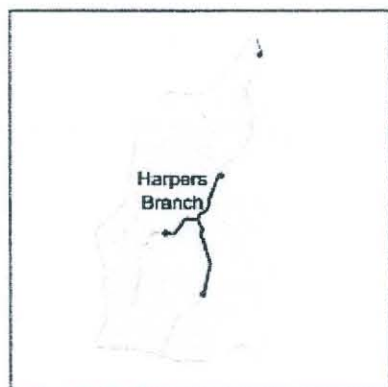
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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	47	Marginal	Harper's Branch ranks 45 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	46	Marginal	Water quality is average, conductivity is very high, nitrate is high, orthophosphorus is high
<b>Sediment Quality</b>	57	Fair	PAHs are very high, herbicides/pesticides are low, metals are very low
<b>Recreation</b>	59	Fair	During dry weather conditions, bacteria is usually not a threat
<b>Aesthetics</b>	48	Marginal	Lots of litter present, slight offensive odors, algae cover is high, most of the creek bed is dry
<b>Habitat</b>	46	Marginal	Increased sediment deposition, cover is insufficient, some channel alteration, bank vegetation is marginal, buffer zone is too small
<b>Aquatic Life</b>	26	Poor	Benthic macroinvertebrate community is bad; diatom community is poor

- Aesthetics impacted by lack of riparian buffer and dense development. Harper's Branch creek is small, heavily urban watershed impacted by high amounts of impervious cover with little riparian habitat.
- High PAHs from heavy transportation landuse; staff research indicates the source of high PAH levels may be parking lot sealants.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

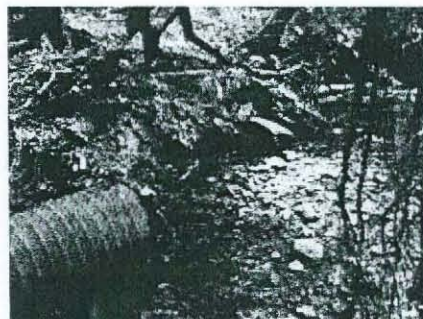
Water Quality	
● Monitoring Sites	○ Marginal
■ Excellent	■ Poor
■ Very Good	■ Bad
■ Good	■ Very Bad
■ Fair	■ No Score

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### Photo Gallery



Harpers Branch Creek  
at Woodland Ave.



Harpers Branch Creek  
at Riverside Drive

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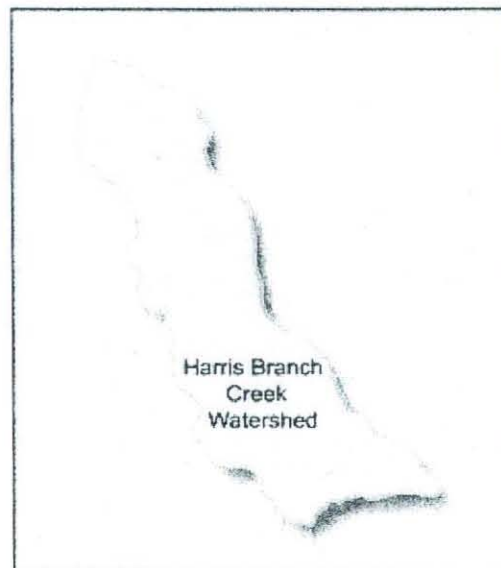
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## Austin's Watersheds

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### Fast Facts

<b>Population</b>	2000: 10,173
	2030: 23,867
<b>Creek Length</b>	11 miles
<b>Drainage Area</b>	11 square miles
<b>Drains To</b>	Gilleland Creek
<b>Well Known Sites</b>	Dessau Elementary and Middle School
<b>Land Use</b>	Residential 28%
	Business 4%
	Civic 1%
	Parks 0%
	Roadways 4%
	Undeveloped 63%

### Watershed Facts

- In response to citizen complaints, investigators find an average of six pollution spills each year in Harris Branch Creek; the most common spill type is petroleum, followed by wastewater.
- Though several sections of this creek are filled with trash, some areas are still in their natural condition.
- Before development began over the past few years, Harris Branch Creek ran through farmlands and pastures.
- Although Harris Branch watershed has a small drainage area, the creek continues to flow throughout the year because of treated discharge from a wastewater treatment plant.

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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	61	Fair	Harris Branch ranks 26 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	34	Poor	Water quality is poor, ammonia is high, nitrate is very high, conductivity is high, orthophosphorus is very high, suspended solids are high
<b>Sediment Quality</b>	84	Very Good	PAHs are very low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	82	Very Good	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	55	Fair	Litter is very bad, noticeable offensive odor, algae covers 10-20% of creek, water is slightly cloudy
<b>Habitat</b>	61	Fair	Increased sediment deposition, some channel alteration, bank stability is marginal, buffer zone is small
<b>Aquatic Life</b>	51	Fair	Benthic macroinvertebrate community is good, diatom community is fair

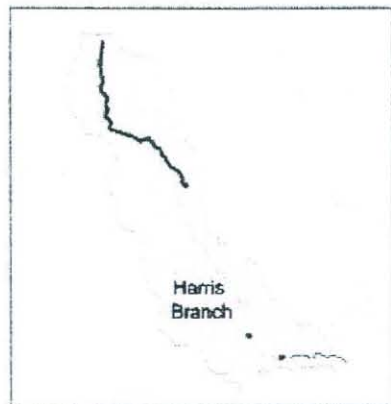
- Habitat scores improved in Harris Branch more than other watersheds in the City.
- Wastewater treatment plant discharges artificially enhance biological communities and contribute to poorer water quality conditions.



- Silt and sedimentation may be impacting diatom community.

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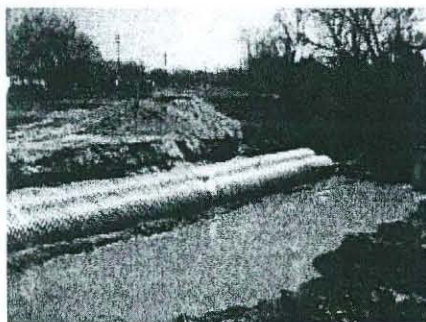


Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
	Monitoring Sites		Marginal
	Excellent		Poor
	Very Good		Bad
	Good		Very Bad
	Fair		No Score

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### Photo Gallery



Harris Branch Creek  
at Crystal Bend Drive



Harris Branch Creek  
at Crystal Bend Drive



Harris Branch Creek  
at Cameron Road



Harris Branch Creek at Boyce Lane

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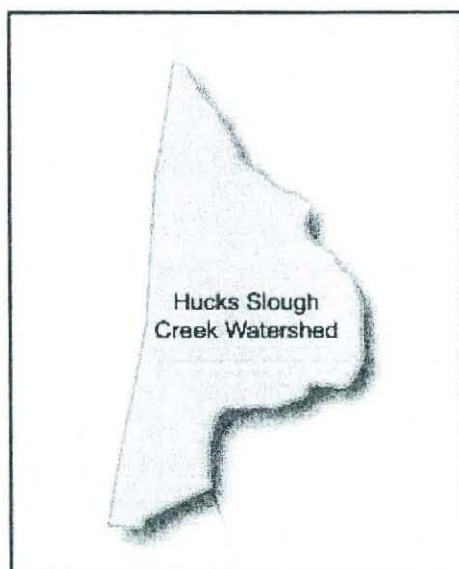
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## Austin's Watersheds


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### Fast Facts

<b>Population</b>	2000: 263	
	2030: 456	
<b>Creek Length</b>	1 miles	
<b>Drainage Area</b>	1 square mile	
<b>Drains To</b>	Colorado River at Lake Austin	
<b>Well Known Sites</b>	Mt Bonnell Spring, Mount Bonnell, Davis Water Treatment Plant	
<b>Land Use</b>	Residential	52%
	Business	0%
	Civic	0%
	Parks	2%
	Roadways	25%
	Undeveloped	21%

### Watershed Facts

- Huck's Slough Creek is often dry throughout the year, however, a spring flows close to the mouth where it enters Lake Austin
- The majority of the creek that is running is located on the Davis Wastewater Treatment Plant property and is inaccessible to the public.

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### Creek Assessments

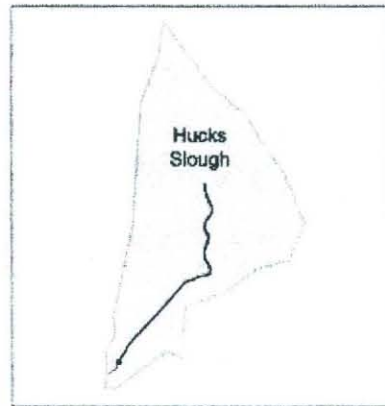
#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	54	Fair	Huck's Slough ranks 41 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	42	Marginal	Water quality is poor, ammonia is high, nitrate is high, conductivity is high, suspended solids are high
<b>Sediment Quality</b>	68	Good	PAHs are high, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	77	Very Good	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	63	Good	Litter is not a problem, no odor, water is cloudy, most of the creek bed is dry
<b>Habitat</b>	27	Poor	Very bad sediment deposition, cover is insufficient, some channel alteration, buffer zone is too small
<b>Aquatic Life</b>	44	Marginal	Benthic macroinvertebrate community is poor, diatom community is good

- Absence of pollution-intolerant diatom species suggests water quality may be impacting aquatic life.
- Contact recreation scores degraded in Hucks Slough more than other watersheds in the City.
- Habitat scores degraded in Huck's Slough more than other watersheds in the City.
- Overall scores degraded in Hucks Slough more than other watersheds in the City.
- Water quality scores degraded in Hucks Slough more than other watersheds in the City.
- Staff research indicates the source of high PAH levels may be from parking lot sealants.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
	Monitoring Sites		Marginal
	Excellent		Poor
	Very Good		Bad
	Good		Very Bad
	Fair		No Score

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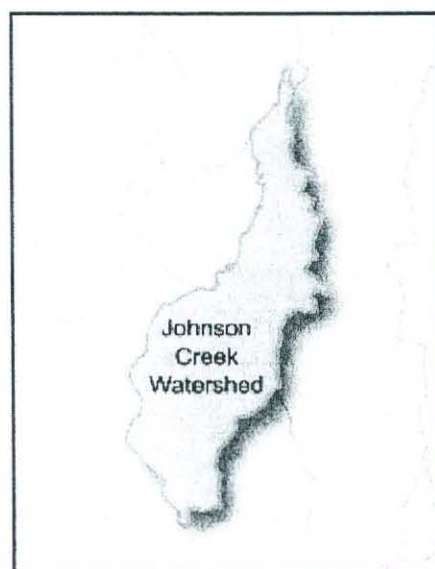
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### Fast Facts

Population	2000: 7,655	
	2030: 10,820	
Creek Length	Length 3 miles	
Drainage Area	Area 2 square miles	
Drains To	Colorado River at Town Lake	
Well Known Sites	Tarrytown Park, O. Henry Middle School, Westenfield Park,	
	Johnson Creek Greenbelt, Casis Elementary	
Land Use	Residential	53%
	Business	2%
	Civic	9%
	Parks	3%
	Roadways	32%
	Undeveloped	1%

### Watershed Facts

- Johnson Creek watershed is divided along most of its length by the Loop 1 (MoPac) Expressway.
- The Johnson Creek greenbelt connects Enfield Road to the Town Lake Hike & Bike Trail.
- The upper portions of the watershed drain parts of Camp Mabry and stretches through the Tarrytown neighborhood.
- The majority of Johnson Creek watershed is in the recharge zone, where water travels underground to the Northern Edwards Aquifer.
- In response to citizen complaints, investigators find an average of 13 pollution problems each year in Johnson Creek. Sewage is the most common problem, followed by sediment.
- Overall water quality is impaired with elevated levels of turbidity, ammonia, nitrates, total suspended solids, and fecal coliform bacteria (particularly at the southern end of Tarrytown park-near Winstead and Tower Dr)

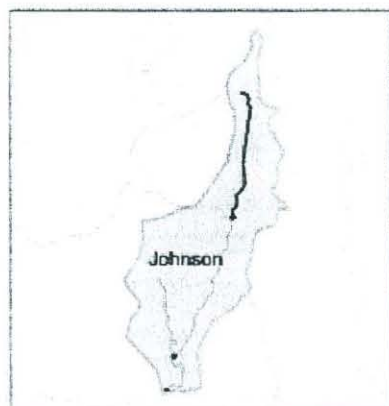
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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	56	Fair	Johnson ranks 36 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	49	Marginal	Water quality is average, conductivity/TDS is high, orthophosphorus is high, suspended solids are high
<b>Sediment Quality</b>	60	Fair	PAHs are high, herbicides/pesticides are high, metals are very low
<b>Recreation</b>	53	Fair	During dry weather conditions, bacteria is usually not a threat
<b>Aesthetics</b>	73	Good	Some litter is present, no odor, algae covers 10-20% of creek
<b>Habitat</b>	57	Fair	Some embeddedness, some channel alteration, buffer zone is too small
<b>Aquatic Life</b>	36	Poor	Benthic macroinvertebrate community is marginal; diatom community is bad

- Aquifer recharge occurring in this creek results in limited flows which affects aquatic life.
- Development near creek banks resulted in poor channel and riparian conditions.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality	
● Monitoring Sites	■ Marginal
■ Excellent	■ Poor
■ Very Good	■ Bad
■ Good	■ Very Bad
■ Fair	■ No Score

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### Photo Gallery



Johnson Creek at South Tarrytown



Johnson Creek at Woodmont Ave.

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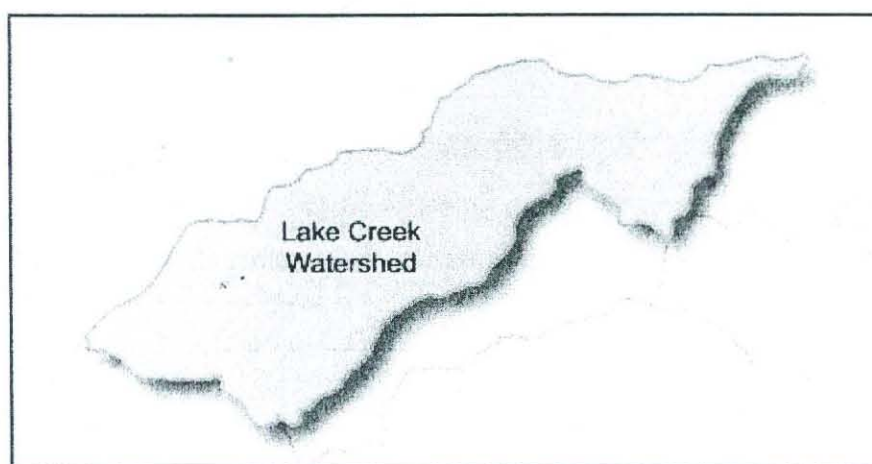
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## Austin's Watersheds

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### Fast Facts

<b>Population</b>	2000: 44,727
	2030: 101,823
<b>Creek Length</b>	16 miles
<b>Drainage Area</b>	21 square miles
<b>Drains To</b>	Brushy Creek near US Hwy 79
<b>Well Known Sites</b>	Westwood HS, Cat Hollow Park, Ganzert Lake
<b>Land Use</b>	Residential 24%
	Business 7%
	Civic 3%
	Parks 2%
	Roadways 12%
	Undeveloped 52%

## Watershed Facts

- In response to citizen complaints, investigators find an average of seven pollution spills each year in Lake Creek watershed; the most common spill type is sewage, followed by petroleum.
- 94% of the Lake Creek watershed passes through the environmentally sensitive Edwards Aquifer Recharge Zone where water travels through caves and sinkholes to "recharge" the aquifer.
- Groundwater quality is generally poor (check with map rating) in this watershed because of urban development.
- This creek receives a large portion of its flow as wastewater discharge near the headwaters. It has bad water quality in the heavily developed western portion of the watershed that gets increasingly better as it flows east to Brushy Creek

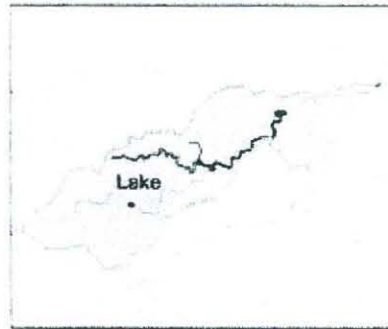
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## Creek Assessments

### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	68	Good	Lake Creek ranks 15 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	46	Marginal	Water quality is average, ammonia is high, nitrate is high, orthophosphorus is high, suspended solids are high
<b>Sediment Quality</b>	84	Very Good	PAHs are very low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	87	Very Good	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	78	Very Good	Some litter present, no odor, algae covers 20-30% of creek
<b>Habitat</b>	56	Fair	Some sediment deposition
<b>Aquatic Life</b>	58	Fair	Benthic macroinvertebrate community is good, diatom community is fair

- Absence of pollution-intolerant diatom species suggests water quality or silt and sedimentation may be impacting diatom community.
- Channelization projects removed significant portion of riparian habitat in upper watershed.
- Development near SH45 may result in water quality impacts and threats to sensitive environmental features like caves and sinkholes.
- Wastewater treatment plant discharges artificially enhance baseflow and contribute to degraded water quality conditions.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

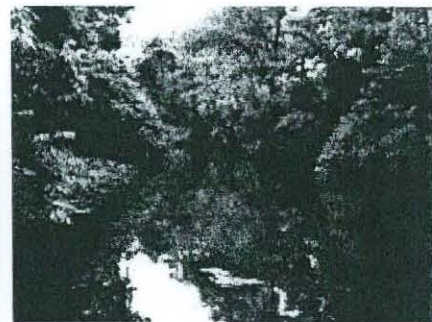
Water Quality	
● Monitoring Sites	▲ Marginal
■ Excellent	■ Poor
■ Very Good	■ Bad
■ Good	■ Very Bad
■ Fair	■ No Score

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### Photo Gallery



Lake Creek at Robinson Ranch



Lake Creek at Sugar Berry Cove



Lake Creek at Meadowheath Drive

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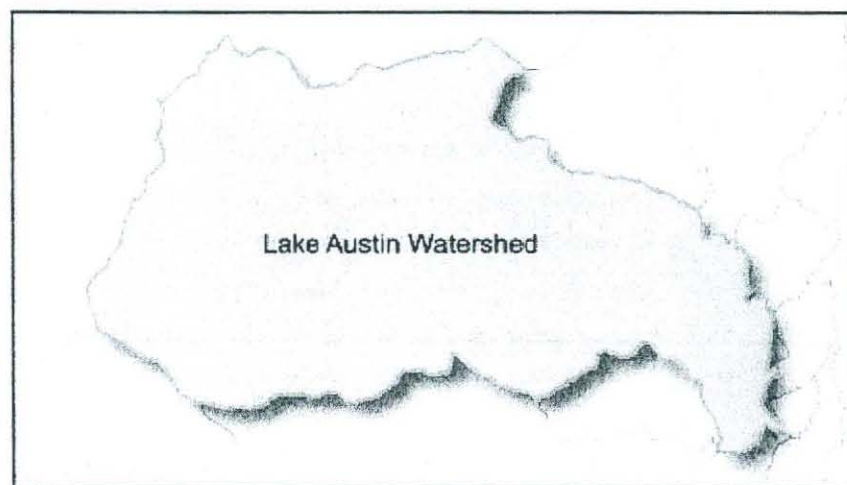
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## Austin's Watersheds

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### Fast Facts

<b>Population</b>	2000: 23,303
	2030 78,558
<b>Creek Length</b>	26 miles
<b>Drainage Area</b>	24 square miles
<b>Drains To</b>	The Gulf of Mexico
<b>Well Known Sites</b>	Steiner Ranch Elementary School, Bridge Point Elementary School, Commons Ford Ranch Park, Emma Long Park, Steiner Ranch
<b>Land Use</b>	Residential 14%
	Business 1%
	Civic 1%
	Parks 23%
	Roadways 5%



Undeveloped

52%

**Watershed Facts**

- Lake Austin is a 1600 acre lake formed by Tom Miller Dam on the Colorado River. The lake stays at a constant level with an operating level of 492.8 feet above sea level.
- The primary inflow to Lake Austin comes from deep water releases from Lake Travis.
- Flow is controlled by the Lower Colorado River Authority (LCRA), which uses the water to produce electricity and provide irrigation for rice farmers downstream.
- Lake Austin is the sixth in a chain of seven lakes known as the Highland Lakes. First dam (Austin Dam) was built in 1893 and destroyed in a major flood in 1900. A second partially constructed dam was destroyed by flooding in 1935. The present dam, Tom Miller Dam, was completed in 1939, with a hydroelectric power plant coming on line in 1940.
- Lake Austin is used for public and private drinking water, flood and irrigation water conveyance, hydropower generation, as well as recreation
- The last major flood occurred in July 2002.
- Lake temperatures range from 52 °F to 80 °F with an average of 65°F
- Clear, clean water and proximity to the City of Austin makes this lake a popular recreation destination for water skiing, fishing and swimming.
- In response to citizen complaints, investigators find an average of 22 pollution spills each year in Lake Austin; the most common spill type is sediment, followed by petroleum, then sewage.
- Lake Austin is an excellent large-mouth bass fishery due to the substantial coverage of aquatic vegetation (including the invasive exotic plant Hydrilla; see [www.cityofaustin.org/watershed/hydrilla.htm](http://www.cityofaustin.org/watershed/hydrilla.htm)).
- Efforts such as lake drawdowns and recent introduction of sterile Asian grass carp have shown some promise in controlling the hydrilla infestation.
- The City of Austin monitors six tributaries within the immediate Lake Austin watershed (below Mansfield Dam) to keep track of local influences on this reservoir.

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Index	Score	Category	Notes
<b>Overall Score</b>	82	Very Good	Lake Austin ranks 2 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	67	Good	Water quality is above average, ammonia is high
<b>Sediment</b>			PAHs are very low,

<b>Quality</b>	89	Excellent	herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	94	Excellent	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	91	Excellent	Litter is not a problem, no odor
<b>Habitat</b>	76	Very Good	Some sediment deposition
<b>Aquatic Life</b>	73	Good	Benthic macroinvertebrate community is good, diatom community is excellent

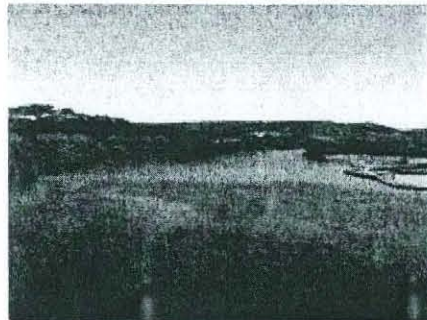
- The Lake Austin tributaries are characterized by high gradient Hill Country streams common on the Edwards Plateau with varying levels of development but generally healthy riparian corridors.

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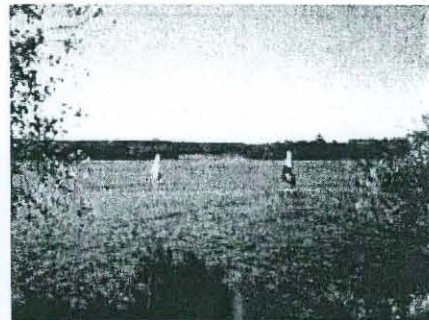
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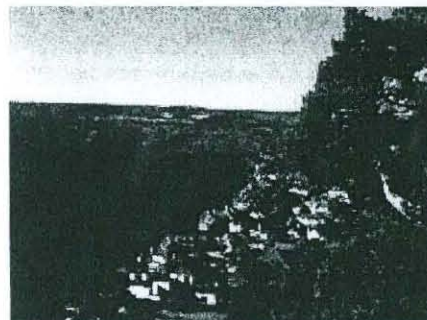
### Photo Gallery



Lake Austin at 360 bridge



Lake Austin



Lake Austin at Mt Bonnell



Lake Austin at FM 2222

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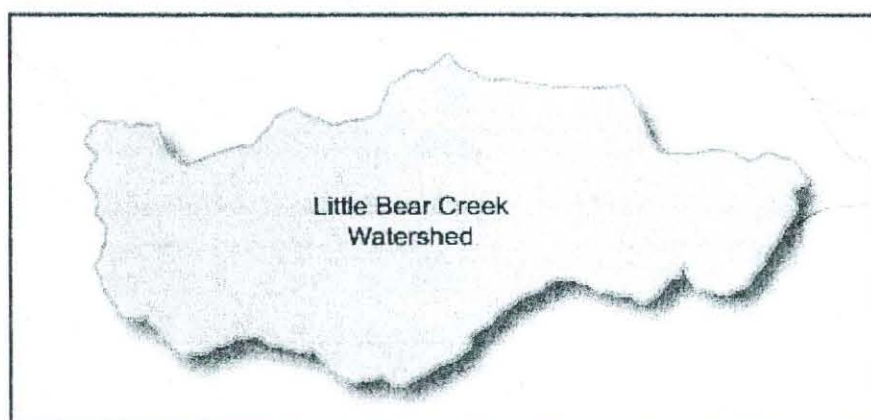
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## Austin's Watersheds


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### Fast Facts

<b>Population</b>	2000: 4,232
	2030: 18,341
<b>Creek Length</b>	15 miles
<b>Drainage Area</b>	23 square miles
<b>Drains To</b>	Bear Creek

### Well Known Sites

<b>Land Use</b>	Residential	8%
	Business	4%
	Civic	0%
	Parks	0 %
	Roadways	0%
	Undeveloped	88%

### Watershed Facts



- 78% of Little Bear Creek watershed passes through the environmentally sensitive Edwards Aquifer Recharge Zone (Barton Springs Segment) where water travels through caves and sinkholes to "recharge" the aquifer.
- The City of Austin and the Hill Country Conservancy have recently purchased land that was a former quarry next to Little Bear Creek. Long-range plans call for using the quarry to increase the amount of water entering the Edwards Aquifer by diverting floodwaters into the quarry.
- Dye trace studies have been conducted on Little Bear Creek watershed to help identify groundwater flow paths; the study indicated that groundwater in Little Bear watershed flows to Barton Springs (in as little as 3 weeks), Eliza Spring, and Old Mill Spring.
- There are several springs at the upper end of the Recharge Zone that help keep the creek flowing year round.
- Little Bear Creek flows into Bear Creek, which then enters Onion Creek south of Austin.

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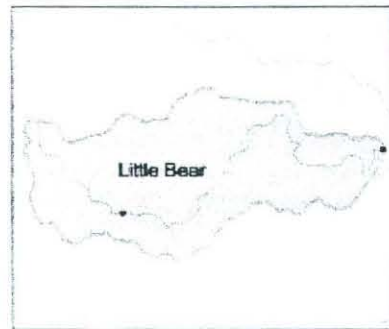
### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	69	Good	Little Bear ranks 13 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	58	Fair	Water quality is above average, ammonia is high
<b>Sediment Quality</b>	81	Very Good	PAHs are very low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	81	Very Good	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	80	Very Good	Litter is not a problem, no odor, algae covers 20-30% of creek
<b>Habitat</b>	57	Fair	All components of the habitat index are good to excellent
<b>Aquatic Life</b>	54	Fair	Benthic macroinvertebrate community is good, diatom community is good

- Conservation easements have been purchased in this watershed to protect aquifer recharge.
- Little Bear Creek generally maintains flow only in portions of the watershed upstream of the recharge zone; in the recharge zone, water flows through caves and sinkholes into the Edwards Aquifer.



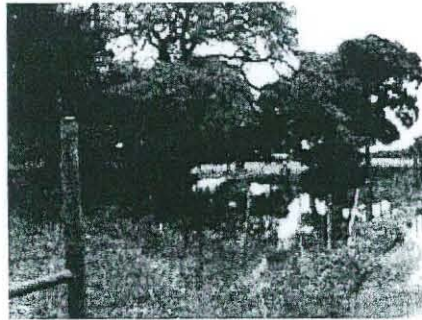
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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
● Monitoring Sites	■ Excellent	■ Marginal	■ Poor
■ Very Good	■ Good	■ Very Bad	■ No Score
■ Fair			

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### Photo Gallery



Little Bear Creek at FM 967

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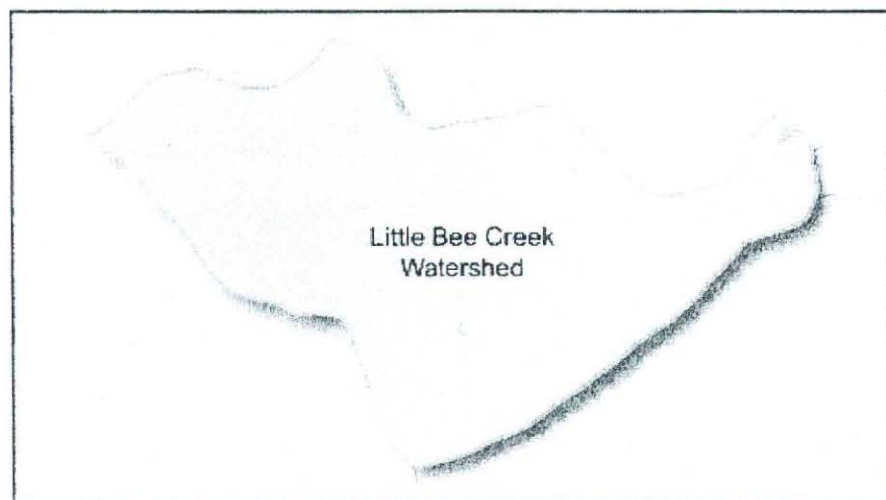
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## Austin's Watersheds

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### Fast Facts

<b>Population</b>	2000: 665
	2030: 2,941
<b>Creek Length</b>	2 miles
<b>Drainage Area</b>	1 square mile
<b>Drains To</b>	Colorado River at Town Lake at the Tom Miller Dam spillway

### Well Known Sites

<b>Land Use</b>	Residential	56%
	Business	0%
	Civic	1%
	Parks	5%
	Roadways	12%

Undeveloped

25%

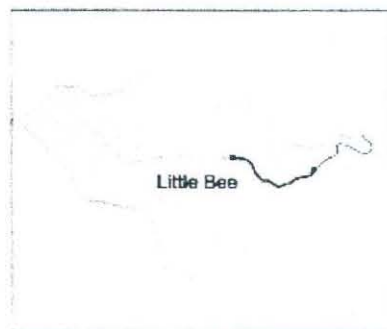
**Watershed Facts**

- The Little Bee Creek watershed passes through the environmentally sensitive Edwards Aquifer Recharge Zone where water travels through caves and sinkholes to "recharge" the aquifer.
- Little Bee Creek spring is at the mouth of the creek where it enters Lake Austin; water in this area of the lake is noticeably cooler from the ground water input. However, there is very little baseflow in most of the Little Bee Creek watershed.

[Return to Top](#)**Creek Assessments****Environmental**

Index	Score	Category	Notes
<b>Overall Score</b>	63	Good	Little Bee ranks 20 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	46	Marginal	Water quality is average, ammonia is high, nitrate is high, conductivity is high, orthophosphorus is high
<b>Sediment Quality</b>	70	Good	PAHs are high, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	79	Very Good	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	84	Very Good	Litter is not a problem, no odor, algae covers 10-20% of creek, some of the creek bed is dry
<b>Habitat</b>	48	Marginal	Some sediment deposition, cover is insufficient, some channel alteration, bank vegetation is marginal
<b>Aquatic Life</b>	49	Marginal	Benthic macroinvertebrate community is fair, diatom community is good

- Absence of pollution-intolerant diatom species suggests water quality may be impacting aquatic life.
- Aesthetics scores improved in Little Bee more than other watersheds in the City.
- Residential development and associated fertilizers may be the cause of high nutrients.
- Staff research indicates the source of high PAH levels may be from parking lot sealants.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality	
Monitoring Sites	Marginal
Excellent	Poor
Very Good	Bad
Good	Very Bad
Fair	No Score

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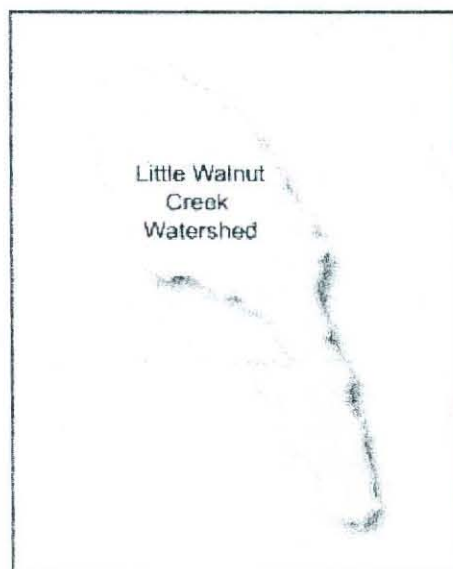
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## Austin's Watersheds

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### Fast Facts

<b>Population</b>	2000: 63,827	
	2030: 69,571	
<b>Creek Length</b>	9 miles	
<b>Drainage Area</b>	11 square miles	
<b>Drains To</b>	Colorado River below Town Lake through Walnut Creek	
<b>Well Known Sites</b>	Rigsby Park, Lanier High School, Pearce Middle School,	
	Gus Garcia Park, Quail Creek Park, Dottie Jordan Park,	
	Austin Community College, Rutherford Campus, Pearce Middle School	
<b>Land Use</b>	Residential	37%
	Business	20%
	Civic	4%
	Parks	1%

Roadways	18%
Undeveloped	19%

### Watershed Facts

- Little Walnut and Walnut Creeks were the sites of early clashes between European settlers and Native Americans.
- Little Walnut and the other eastern watersheds have long been valued as prime farm and ranching areas, as the soils in these watersheds are deeper and richer than those in the more western watersheds.
- A limited number of bottomland and streamside woodlands are the last vestiges of the natural environment, preserved because of the floodplain and associated flood hazards.
- 125 Storm Discharge Permits have been issued in this watershed.
- In response to citizen complaints, investigators find an average of 73 pollution problems each year in Little Walnut Creek, with, sewage the primary problem, followed by petroleum, wastewater and yard waste.
- Water quality is fairly good considering the nearly complete urbanization of the watershed\*(2001 Water Watchdogs EII Phase 1 Watersheds Report (monitoring conducted in 2000)
- Little Walnut Creek is a classic example of a stream in the transitional zone from the Edwards Plateau to the Blackland Prairie ecoregions.

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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	63	Good	Little Walnut ranks 20 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	56	Fair	Water quality is average, suspended solids are high
<b>Sediment Quality</b>	75	Good	PAHs are high, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	66	Good	During dry weather conditions, bacteria is usually not a threat
<b>Aesthetics</b>	67	Good	Some litter is present, slight offensive odors, algae covers 10-20% of creek, water is slightly cloudy, some of the creek bed is dry
<b>Habitat</b>	57	Fair	Some sediment deposition, some channel alteration, bank stability is marginal, buffer zone is small

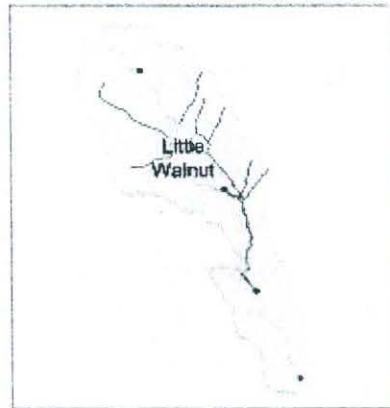
**Aquatic Life**

58

Fair

Benthic macroinvertebrate community is good; diatom community is fair

- Channel stability and erosion problems in the watershed due to heavy hydrologic modification and dense development.
- Deeply incised channels, failing banks and unstable substrate due to dense development.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.


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**Photo Gallery**

Little Walnut Creek at US 290



Little Walnut Creek  
at Golden Meadow Rd.



Little Walnut Creek  
at Hermitage Drive

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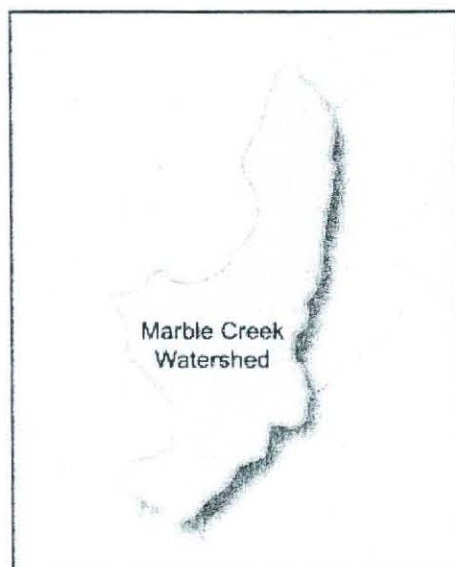
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## Austin's Watersheds


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### Fast Facts

<b>Population</b>	2000: 1,028	
	2030: 6,388	
<b>Creek Length</b>	7 miles	
<b>Drainage Area</b>	4 square miles	
<b>Drains To</b>	Onion Creek near McKinney Falls State Park	
<b>Well Known Sites</b>	Marble Creek Greenbelt, Springfield Park, Grand Meadow Park	
<b>Land Use</b>	Residential	17%
	Business	0%
	Civic	0%
	Parks	1%
	Roadways	2%
	Undeveloped	79%

### Watershed Facts

- Slow moving areas of the creek are often choked with algae
- A major extension of William Cannon caused severe stream damage to the creek in the late 1990s, but the channel is reestablishing itself and vegetative growth is recovering
- Marble Creek is a low-gradient Blackland Prairie stream with heavy agricultural land use.

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### Creek Assessments

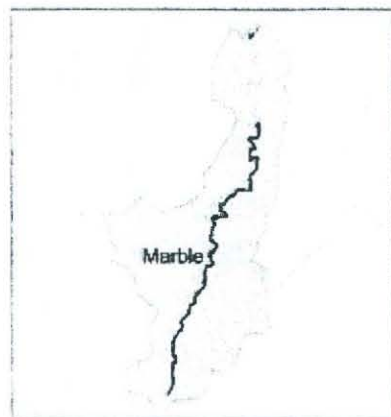
#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	61	Fair	Marble ranks 26 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	51	Fair	Water quality is average, ammonia is high, nitrate is high, conductivity is high, suspended solids are high
<b>Sediment Quality</b>	83	Very Good	PAHs are very low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	90	Excellent	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	58	Fair	Lots of litter present, no odor, algae covers 20-30% of creek, surface appearance is poor, water is cloudy, some of the creek bed is dry
<b>Habitat</b>	53	Fair	Some sediment deposition, cover is insufficient, some channel alteration
<b>Aquatic Life</b>	30	Poor	Benthic macroinvertebrate community is poor, diatom community is fair

- Marble is transitioning from heavily agricultural degradation to new impacts from residential development.
- Silt and sedimentation may be impacting diatom community, lack of riparian corridor impacting aquatic habitat.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

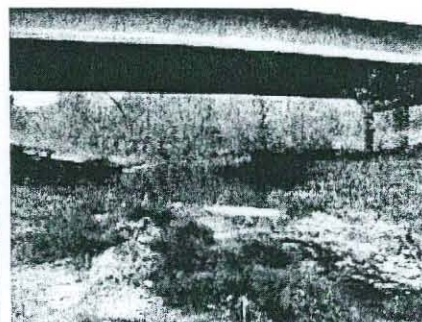
Water Quality			
	Monitoring Sites		Marginal
	Excellent		Poor
	Very Good		Bad
	Good		Very Bad
	Fair		No Score

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### Photo Gallery



Marble Creek at Thaxton Road



Marble Creek above Onion Creek

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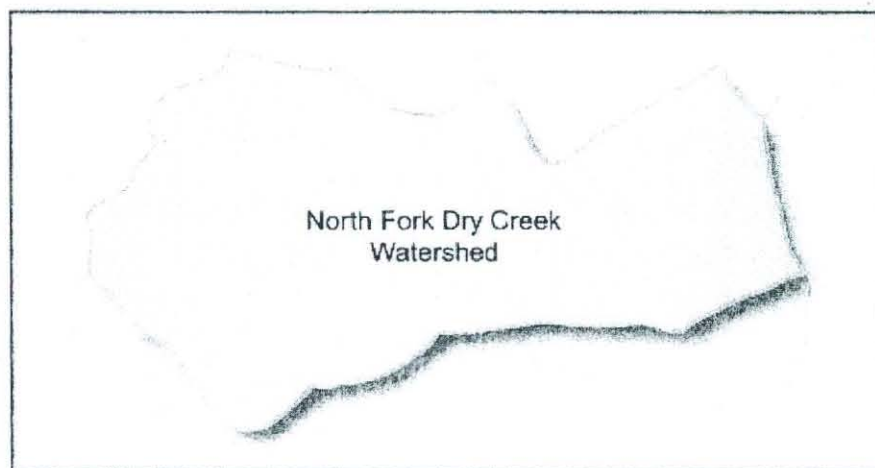
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### Fast Facts

<b>Population</b>	2000: 590
	2030: 3,058
<b>Creek Length</b>	9 miles
<b>Drainage Area</b>	4 square miles
<b>Drains To</b>	Dry Creek South

### Well Known Sites

<b>Land Use</b>	Residential	27%
	Business	5%
	Civic	0%
	Parks	0%
	Roadways	5%
	Undeveloped	62%



### Watershed Facts

- This is one of the headwater tributaries of Dry Creek South and is dominated by agricultural land use. There is little baseflow in these southeastern watersheds due probably to degraded creekside areas and deep clayey soils.
- North Fork Dry Creek is a low gradient Blackland Prairie stream impacted by agricultural activities and low density development.
- Freshwater mussels, an indication of good water quality, have historically been observed in North Fork Dry.

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### Creek Assessments

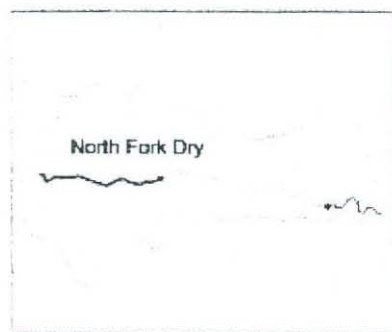
#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	62	Fair	North Fork Dry ranks 24 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	53	Fair	Water quality is average, ammonia is high, conductivity is very high, orthophosphorus is high, suspended solids are high
<b>Sediment Quality</b>	83	Very Good	PAHs are very low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	92	Excellent	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	71	Good	Some litter present, no odor, water is cloudy, most of the creek bed is dry
<b>Habitat</b>	47	Marginal	Very bad sediment deposition, cover is insufficient, buffer zone is too small
<b>Aquatic Life</b>	24	Bad	Benthic macroinvertebrate community is poor, diatom community is fair

- Absence of pollution-intolerant diatom species suggests water quality may be impacting aquatic life.
- Flow limitation due to soil and topography. Large portion of riparian zone converted to agricultural uses.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
	Monitoring Sites		Marginal
	Excellent		Poor
	Very Good		Bad
	Good		Very Bad
	Fair		No Score

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### Photo Gallery



North Fork Dry Creek at US 183



North Fork Dry Creek at FM 812

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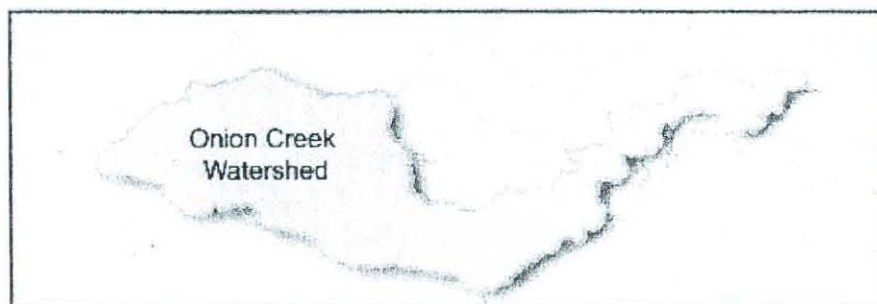
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## Austin's Watersheds


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### Fast Facts

**Population** 2000: 32,955  
2030:

**Creek Length** 79 miles

**Drainage Area** 211 square miles

**Drains To** Colorado River east of Austin

**Well Known Sites** Sites Pilot Knob Volcano, Onion Creek Wildlife Sanctuary, Onion Creek Metropolitan Park, Onion Creek Sports Complex, Roy Kiser/Jimmy Clay Golf Course (built over an old wastewater treatment plant), Onion Creek Preserve, Bergstrom International Airport, Bergstrom Municipal Golf Course, McKinney Falls State Park

<b>Land Use</b>	Residential	4%
	Business	1%
	Civic	0%
	Parks	1%
	Roadways	3%
	Undeveloped	91%

### Watershed Facts

- Onion Creek flows throughout the year with the creek beginning north of Dripping Springs and emptying into the Colorado River approximately eight miles downstream of Town Lake.
- The Onion Creek watershed passes through the environmentally sensitive Edwards Aquifer Recharge Zone where water travels through caves and sinkholes to "recharge" the aquifer.
- Onion Creek watershed is coming under increasing development pressure in both the upper and lower watershed. The upper end is primarily residential/rural based, while the lower end is associated with Austin/Bergstrom International Airport
- Onion Creek watershed is estimated to recharge nearly half of all water entering the aquifer and its recharge benefits all aquifer users between Onion Creek and Barton Springs.
- The City of Austin has purchased tracts that are responsible for almost one-third of Onion Creek Recharge in order to better protect the aquifer.
- Antioch Cave, located in the watershed, may have the greatest capacity to recharge water into the aquifer than any other known recharge feature.
- Dye tracing indicates that water moves at different rates through the aquifer depending on water levels. Dyes from Onion Creek have reached Barton Springs in as little as three days or as long as three weeks.
- In response to citizen calls, investigators find an average of 16 spills each year; the most common spill type is petroleum, followed by trash, then sewage.
- "Sea Monster found on Onion Creek by two UT Geology students" headlines in newspaper in 1935, was actually the "Mosasaurus" currently residing in the Texas Memorial Museum.
- Severe flooding is possible, especially in the lower end of the watershed.

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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	77	Very Good	Onion ranks 4 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	64	Good	Water quality is above average, ammonia is high
<b>Sediment Quality</b>	88	Excellent	PAHs are very low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	87	Very Good	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	94	Excellent	Litter is not a problem, no odor

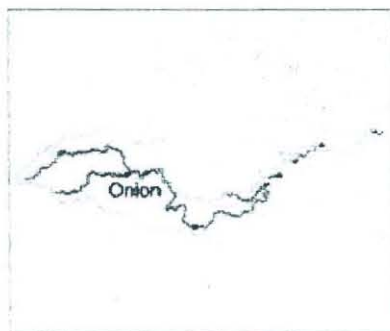


<b>Habitat</b>	61	Fair	Some sediment deposition
<b>Aquatic Life</b>	70	Good	Benthic macroinvertebrate community is good, diatom community is good

- Benthic macroinvertebrate data indicate that Onion Creek is of high aquatic life use by state evaluation methods; presence of pollution-intolerant diatom species suggest healthy community.
- Lower portion of watershed threatened by erosion due to development pressure beyond City of Austin jurisdiction.
- Portions of Onion Creek are listed on the State 303(d) List of Impaired Waterbodies for depressed Dissolved Oxygen.
- The US Corps of Engineers is planning projects for flood and ecosystem restoration; this may result in federal funding for projects that improve water quality and aquatic life.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
Monitoring Sites	Excellent	Marginal	Poor
Very Good	Bad	Very Bad	No Score
Good			
Fair			

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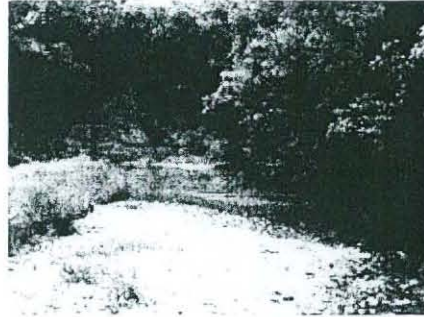
### Photo Gallery



Onion Creek at McKinney Falls  
below lower falls



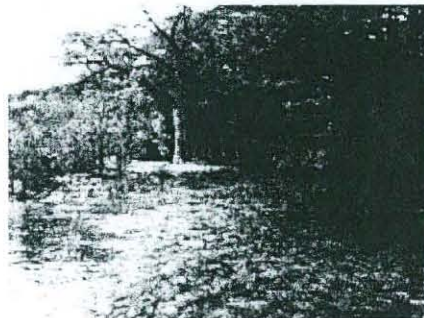
Onion Creek at Sky Ranch



Onion Creek at South Austin Regional  
wastewater treatment plant



Onion creek above IH35



Onion Creek near Driftwood, Hwy 150

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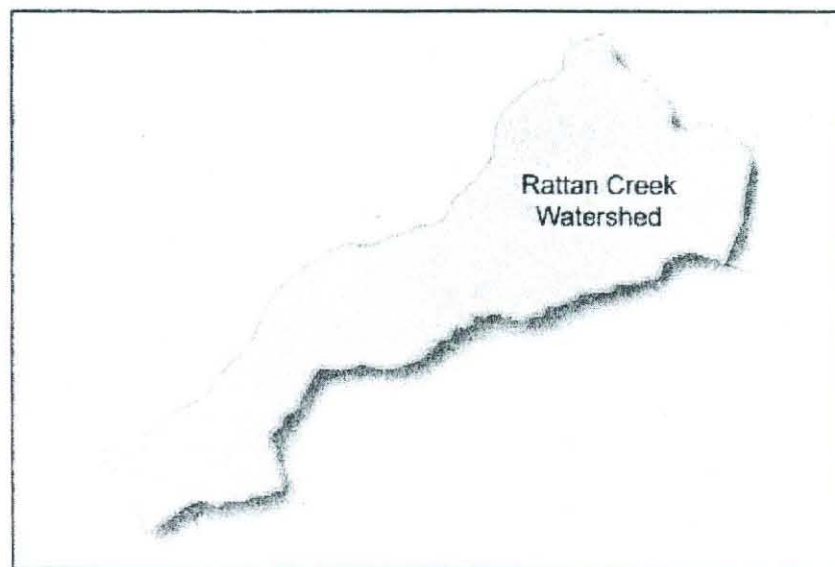
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### Fast Facts

<b>Population</b>	2000: 11,863
	2030: 33,506
<b>Creek Length</b>	8 miles
<b>Drainage Area</b>	7 square miles
<b>Drains To</b>	Lake Creek near Round Rock.

### Well Known Sites

<b>Land Use</b>	Residential	13%
	Business	3%
	Civic	1%
	Parks	1%

Roadways	7%
Undeveloped	75%

### Watershed Facts

- 98% of Rattan Creek watershed passes through the environmentally sensitive Edwards Aquifer Recharge Zone where water travels through caves and sinkholes to "recharge" the aquifer.
- Rattan Creek is the largest tributary of the Lake Creek Watershed
- Most of Rattan Creek watershed is in Williamson County
- In response to citizen calls, investigators find an average of 5 spills each year; the most common spill type is petroleum, followed by sewage.

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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	66	Good	Rattan ranks 16 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	51	Fair	Water quality is average, orthophosphorus is high
<b>Sediment Quality</b>	90	Excellent	PAHs are very low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	79	Very Good	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	73	Good	Litter is not a problem, no odor, algae covers 20-30% of creek, some of the creek bed is dry
<b>Habitat</b>	39	Marginal	Some sediment deposition, cover is insufficient, some channel alteration, bank vegetation is sparse, buffer zone is too small
<b>Aquatic Life</b>	64	Good	Benthic macroinvertebrate community is good, diatom community is good

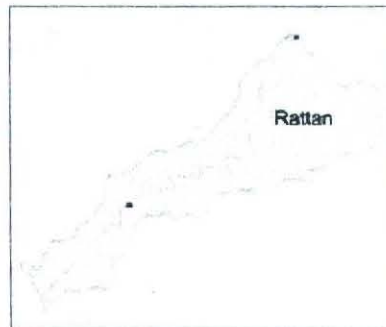
- Absence of pollution-intolerant diatom species suggests water quality may be impacting aquatic life.
- Almost all of Rattan Creek lies over the Northern Edwards recharge zone, and the creek rarely maintains baseflow.









- Channelization projects removed significant portion of riparian habitat. Extensive channelization results in poor habitat scores.
- New residential development in Rattan may impact future water quality conditions.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
	Monitoring Sites		Marginal
	Excellent		Poor
	Very Good		Bad
	Good		Very Bad
	Fair		No Score

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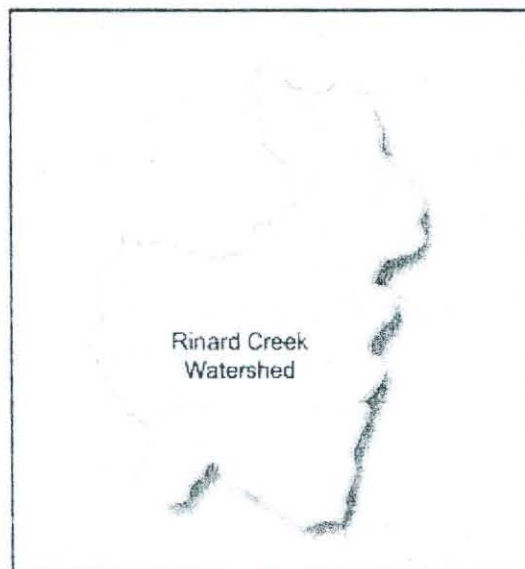
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### Fast Facts

<b>Population</b>	2000: 284
	2030: 6,940
<b>Creek Length</b>	7 miles
<b>Drainage Area</b>	8 square miles
<b>Drains To</b>	Onion Creek just east of I35

### Well Known Sites

<b>Land Use</b>	Residential	7%
	Business	0%
	Civic	0%
	Parks	1%
	Roadways	1%
	Undeveloped	91%

### Watershed Facts

- Rinard Creek flows into Onion Creek just east of I35.
- A wastewater treatment plant discharge is proposed as part of a new subdivision in this watershed.
- A large spring named "Rinard Spring" discharges in the mid-reach of the watershed.

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### Creek Assessments

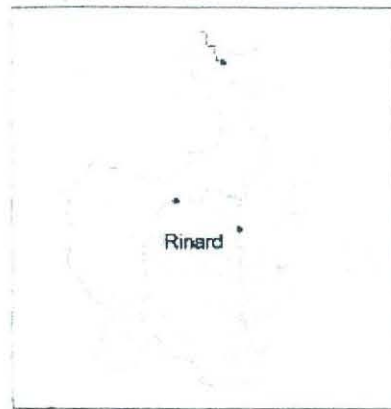
#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	70	Good	Rinard ranks 11 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	65	Good	Water quality is above average, ammonia is high, suspended solids are high
<b>Sediment Quality</b>	81	Very Good	PAHs are very low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	96	Excellent	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	74	Good	Litter is not a problem, no odor, algae covers 10-20% of creek, water is slightly cloudy, most of the creek bed is dry
<b>Habitat</b>	40	Marginal	Increased sediment deposition, cover is insufficient, bank stability is bad, bank vegetation is bad, buffer zone is small
<b>Aquatic Life</b>	62	Fair	Benthic macroinvertebrate community is fair, diatom community is excellent

- New large residential subdivisions in Rinard may impact future water quality conditions.
- Presence of pollution-intolerant diatom species suggest healthy community; aquatic life scores improved in Rinard more than other watersheds in the City.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
	Monitoring Sites		Marginal
	Excellent		Poor
	Very Good		Bad
	Good		Very Bad
	Fair		No Score

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### Photo Gallery



Rinard Creek at Bradshaw Road



Rinard Creek at FM 1327

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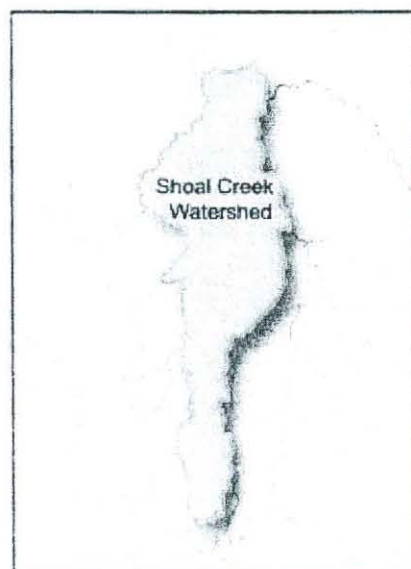
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## Austin's Watersheds


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[Photo Gallery](#)

### Fast Facts

Population	2000: 59,011	
	2030: 78,759	
Creek Length	11 miles	
Drainage Area	13 square miles	
Drains To	Colorado River at Town Lake	
Well Known Sites	J.J. Pickle Research Center, Northcross Mall, Central	
	Market, Pease Park, Shoal Creek Hospital, Anderson High School	
Land Use	Residential	43%
	Business	16%
	Civic	9%
	Parks	3%
	Roadways	24%
	Undeveloped	5%

### Watershed Facts

- Shoal Creek was the original western boundary of the City of Austin.
- Writer O. Henry searched for buried Spanish gold along Shoal Creek in the 1890's and later wrote a short story about his quest.
- Its small tributary, Little Shoal Creek, was covered over by a storm sewer in 1917 so that it is possible to drive by automobile along its former course where Union soldiers watered their horses in post Civil War days.
- The construction of the popular Shoal Creek Hike and Bike Trail in the 1930's is considered one of the first such projects in the nation.
- The Flood Early Warning System (FEWS) program was initiated following the May 1981 flood that took nine lives in the Shoal Creek watershed.
- One of the numerous Indian burial mounds along the creek is near the old McCall Spring just west of the street now called Balcones Trail. It is about seven feet high and covered over with rock shale.
- In response to citizen complaints, investigators find an average of 97 pollution problems each year in Shoal Creek. Sewage is the most common problem, followed by petroleum.
- Median fecal coliform concentrations were above the recreational limit in 2000\*. (2001 Water Watchdogs EII Phase 1 Watersheds Report (monitoring conducted in 2000))
- Erosion Restoration Projects are underway in -Shoal Creek at 26th St., Shoal at West Ave.

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### Creek Assessments

#### Environmental

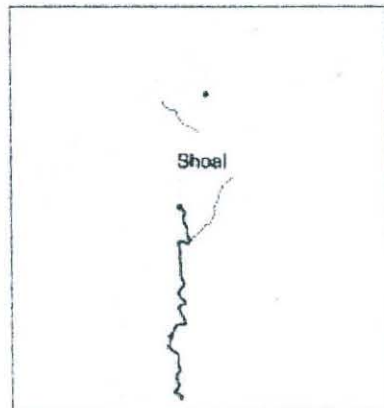
Index	Score	Category	Notes
<b>Overall Score</b>	54	Fair	Shoal ranks 41 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	54	Fair	Water quality is average
<b>Sediment Quality</b>	68	Good	PAHs are high, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	58	Fair	During dry weather conditions, bacteria is usually not a threat
<b>Aesthetics</b>	58	Fair	Lots of litter present, slight offensive odors, algae covers 10-20% of creek, water is slightly cloudy, some of the creek bed is dry
			Increased embeddedness, cover is

<b>Habitat</b>	47	Marginal	insufficient, major channel alteration, buffer zone is too small
<b>Aquatic Life</b>	39	Marginal	Benthic macroinvertebrate community is poor; diatom community is marginal

- Austin Clean Water Program is working on rehabilitation of wastewater lines that may be the cause of elevated bacteria.
- Extensive erosion has occurred in Shoal Creek.
- Flashy flow (from flood conditions to dry) negatively impacts aquatic life.
- Portions of Shoal Creek are listed on the State 303(d) List of Impaired Waterbodies for elevated bacteria.
- Sediment scores improved in Shoal more than other watersheds in the City.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
	Monitoring Sites		Marginal
	Excellent		Poor
	Very Good		Bad
	Good		Very Bad
	Fair		No Score

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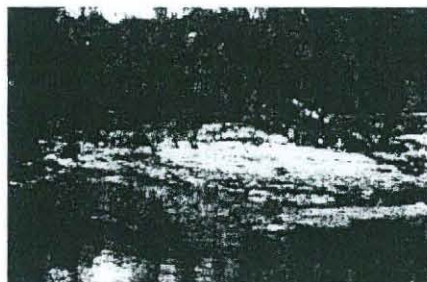
### Photo Gallery



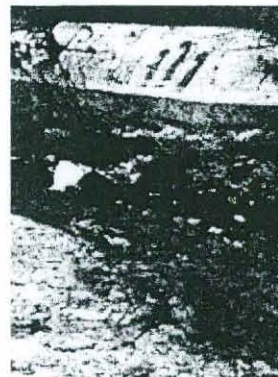
Shoal Creek at 24th Street



Shoal Creek at Shoal Edge Court



Shoal Creek above 1st Street



Shoal Creek above 1st Street

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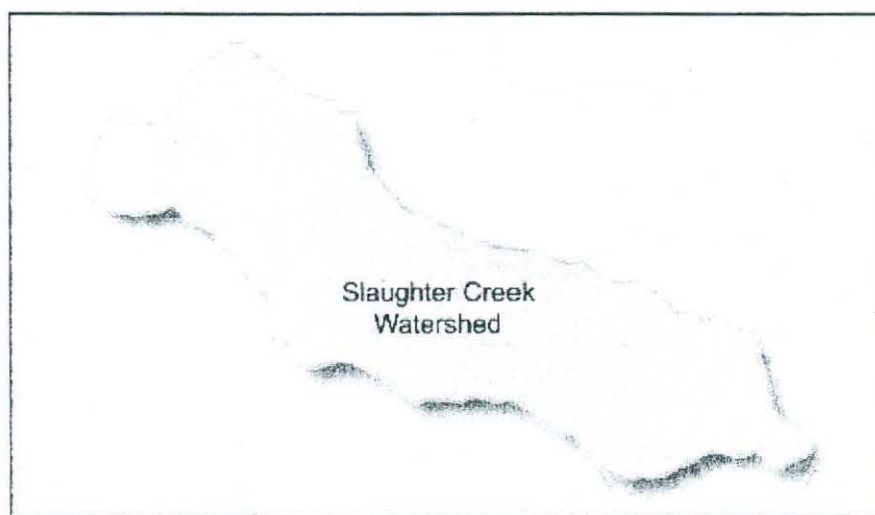
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## Austin's Watersheds


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### Fast Facts

#### Population

2000: 33,471

2030: 76,579

#### Creek Length

18 miles

#### Drainage Area

31 square miles

#### Drains To

Onion Creek just east of I-35

### Well Known Sites

LBJ Wildflower Center, Slaughter Creek Metro Park, Mary Moore Searight Park, Veloway, Bowie H.S., Akins HS, Kiker and Casey Elementary Schools, Bending Oaks

Conservation Easement, Paschall Conservation Easement, Baker Water Quality Protection Land, Hafif Water Quality Protection Land, Hielscher Water Quality Protection Land

Residential

26%

<b>Land Use</b>	Business	1%
	Civic	1%
	Parks	5%
	Roadways	8%
	Undeveloped	59%

### Watershed Facts

- The creek is named for Augustine B. Slaughter, a Texas Ranger from the 1840s. It is said that he is buried on the banks of the creek.
- The Slaughter Creek watershed passes through the environmentally sensitive Edwards Aquifer Recharge Zone where water travels through caves and sinkholes to "recharge" the aquifer.
- The creek is typically dry in the recharge zone.
- In response to citizen calls, investigators find an average of 28 spills each year; the most common spill type is petroleum, followed by sewage then trash.

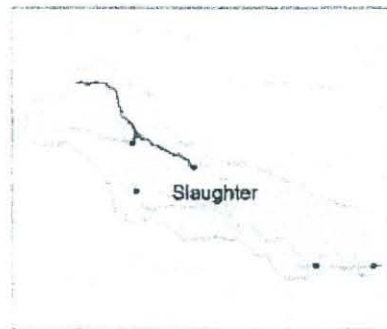
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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	72	Good	Slaughter ranks 8 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	63	Good	Water quality is average, ammonia is high
<b>Sediment Quality</b>	86	Very Good	PAHs are very low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	80	Very Good	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	83	Very Good	Litter is not a problem, no odor, algae covers 10-20% of creek
<b>Habitat</b>	57	Fair	Some sediment deposition
<b>Aquatic Life</b>	60	Fair	Benthic macroinvertebrate community is good, diatom community is good

- Although Slaughter Creek is listed on the State 303(d) List of Impaired Waterbodies for an impaired macrobenthos community, the State is conducting more sampling to better characterize the aquatic life.
- Residential developments downstream of the recharge zone impact water quality and may contribute to elevated nutrient concentrations.

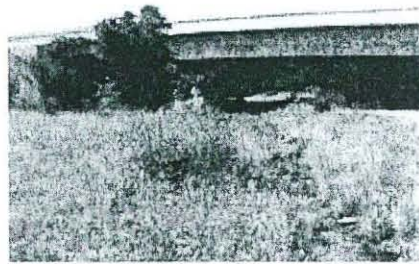
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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality	
 Monitoring Sites	 Marginal
 Excellent	 Poor
 Very Good	 Bad
 Good	 Very Bad
 Fair	 No Score

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### Photo Gallery



Slaughter Creek Branch at Hwy 45 West

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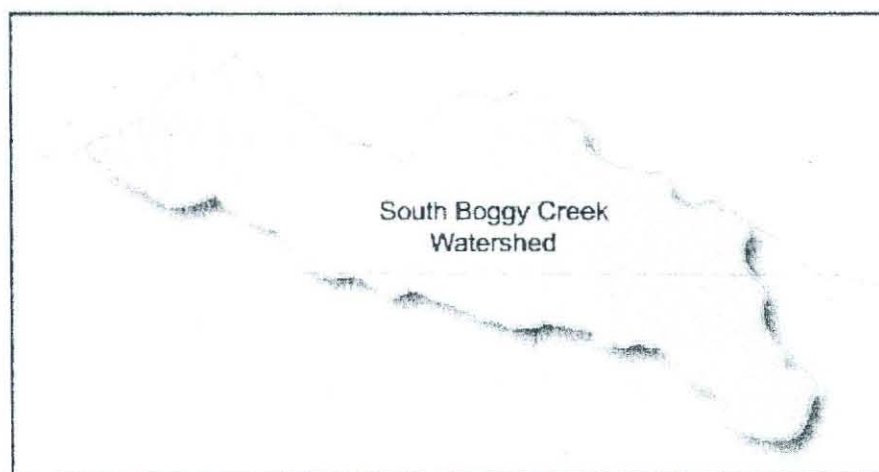
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### Fast Facts

<b>Population</b>	2000: 16,002	
	2030: 18,721	
<b>Creek Length</b>	7 miles	
<b>Drainage Area</b>	5 square miles	
<b>Drains To</b>	Onion Creek just east of I-35	
<b>Well Known Sites</b>	Dittmar Park and Recreation center, Piney Bend Park, Williams Park	
<b>Land Use</b>	Residential	42%
	Business	5%
	Civic	5%
	Parks	1%
	Roadways	14%
	Undeveloped	33%



**Watershed Facts**

- South Boggy creek runs through south Austin and is dry downstream of Bluff Springs Road much of the year.
- In response to citizen calls, investigators find an average of 13 spills each year; the most common spill type is petroleum, followed by sewage then paint.

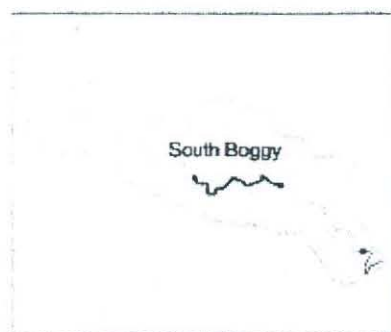
[Return to Top](#)**Creek Assessments****Environmental**

Index	Score	Category	Notes
<b>Overall Score</b>	63	Good	South Boggy ranks 20 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	54	Fair	Water quality is average, nitrate is high, orthophosphorus is high
<b>Sediment Quality</b>	92	Excellent	PAHs are very low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	69	Good	During dry weather conditions, bacteria is usually not a threat
<b>Aesthetics</b>	84	Very Good	Some litter present, no odor
<b>Habitat</b>	45	Marginal	Some sediment deposition, some channel alteration, buffer zone is small
<b>Aquatic Life</b>	36	Poor	Benthic macroinvertebrate community is fair, diatom community is fair

- Absence of pollution-intolerant diatom species suggests water quality may be impacting aquatic life; silt and sedimentation may be impacting diatom community.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.



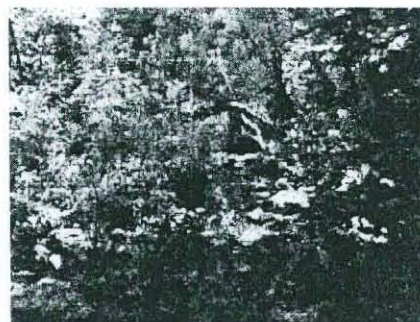
Water Quality	
Monitoring Sites	Marginal
Excellent	Poor
Very Good	Bad
Good	Very Bad
Fair	No Score

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### Photo Gallery



South Boggy Creek at Congress Ave.



South Boggy Creek at  
Bluff Springs Road

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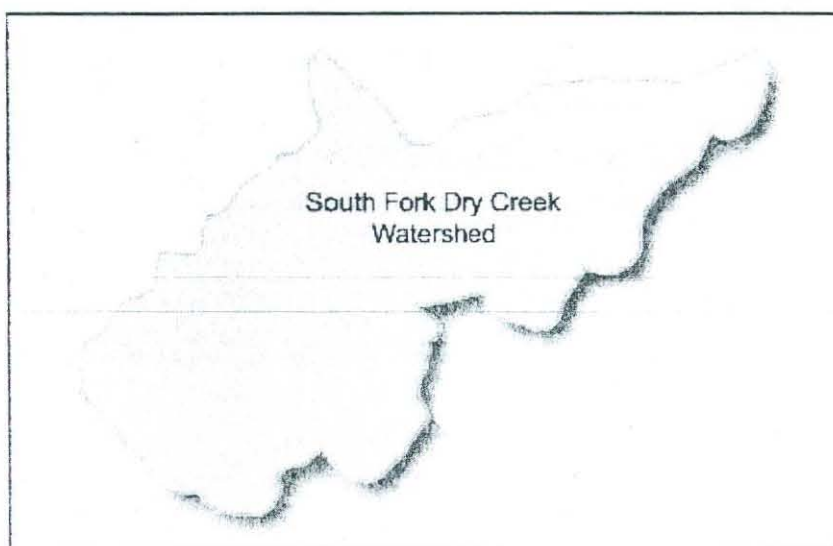
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## Austin's Watersheds

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### Fast Facts

<b>Population</b>	2000: 1,276
	2030: 8,011
<b>Creek Length</b>	10 miles
<b>Drainage Area</b>	9 square miles
<b>Drains To</b>	Dry Creek

### Well Known Sites

<b>Land Use</b>	Residential	16%
	Business	1%
	Civic	0%
	Parks	0%
	Roadways	2%

Undeveloped 81%

**Watershed Facts**

- This is the one of the headwater tributaries of Dry Creek South and is dominated by agricultural land use. There is little baseflow in these southeastern watersheds due probably to degraded riparian zones and deep clay-like soils.

[Return to Top](#)**Creek Assessments****Environmental**

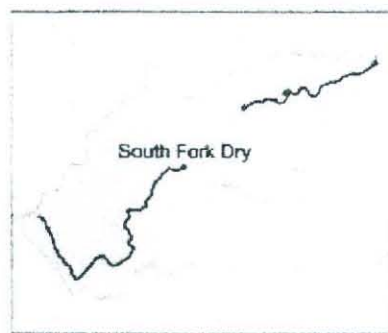
Index	Score	Category	Notes
<b>Overall Score</b>	59	Fair	South Fork Dry ranks 30 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	53	Fair	Water quality is average, ammonia is high, suspended solids are high
<b>Sediment Quality</b>	82	Very Good	PAHs are very low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	85	Very Good	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	71	Good	Some litter present, no odor, water is cloudy, most of the creek bed is dry
<b>Habitat</b>	30	Poor	Very bad sediment deposition, cover is insufficient, bank stability is bad, bank vegetation is bad, buffer zone is small
<b>Aquatic Life</b>	34	Poor	Benthic macroinvertebrate community is fair, diatom community is fair

- Flow limitation due to soil and topography. Large portion of riparian zone converted to agriculture uses.
- Silt and sedimentation may be impacting aquatic life.

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Environmental scores are based on a full range of chemical, biological, and physical





assessments.

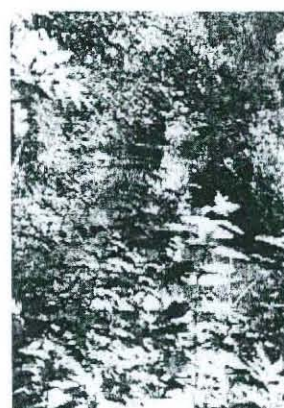
Water Quality	
● Monitoring Sites	□ Marginal
■ Excellent	□ Poor
■ Very Good	□ Bad
■ Good	■ Very Bad
■ Fair	■ No Score

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### Photo Gallery



South Fork Dry at US 183



South Fork Dry at FM 812

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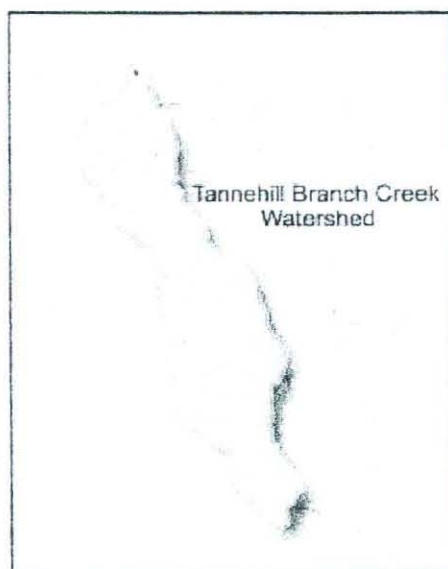
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## Austin's Watersheds



Tannehill Branch Creek  
Watershed

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[Photo Gallery](#)

### Fast Facts

<b>Population</b>	2000: 13,976	
	2030: 24,742	
<b>Creek Length</b>	7 miles	
<b>Drainage Area</b>	4 square miles	
<b>Drains To</b>	Colorado River below Town Lake through Boggy Creek	
<b>Well Known Sites</b>	Morris Williams Golf Course, Bartholomew Park, Highland Mall, Robert Mueller Airport	
<b>Land Use</b>	Residential	23%
	Business	17%
	Civic	3%
	Parks	11%
	Roadways	38%
	Undeveloped	10%

### Watershed Facts

- Like the larger Boggy Creek, Tannehill Branch has had serious flooding and erosion problems.
- In response to citizen complaints, investigators find an average of 37 pollution problems each year in Tannehill Branch. Sewage is the most common problem, followed by petroleum then trash.
- Elevated nutrient and bacteria levels in 2000\*(2001 Water Watchdogs EII Phase 1 Watersheds Report (monitoring conducted in 2000))
- Trash and debris are a consistent problem
- The monitoring site at Highland Mall has the worst water quality in the creek; but water quality improves further downstream\*.(2001 Water Watchdogs EII Phase 1 Watersheds Report (monitoring conducted in 2000))
- Tannehill maintains more baseflow than other streams in the transitional zone from the Edwards Plateau to the Blackland Prairie ecoregions.
- Restoring Tannehill Creek

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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	62	Fair	Tannehill Branch ranks 24 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	65	Good	Water quality is above average
<b>Sediment Quality</b>	75	Good	PAHs are high, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	76	Very Good	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	65	Good	Litter is very bad, no odor, some of the creek bed is dry
<b>Habitat</b>	50	Marginal	Increased sediment deposition, major channel alteration, bank stability is marginal, bank vegetation is marginal, buffer zone is small
<b>Aquatic Life</b>	39	Marginal	Benthic macroinvertebrate community is poor; diatom community is marginal

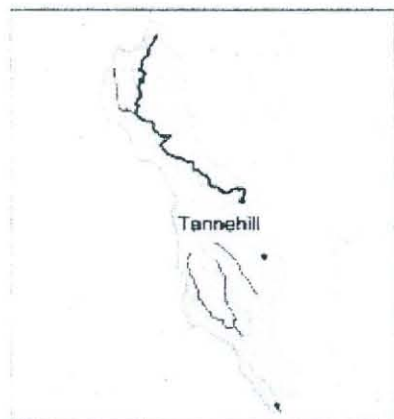
- Austin Clean Water Program is working on rehabilitation of wastewater lines that may be the cause of phosphorous and odor.
- Channel restoration and erosion control project in Bartholomew Park may benefit watershed habitat.



- Robert Mueller Airport Redevelopment may impact water quality and hydrology.
- Water quality scores improved in Tannehill more than other watersheds in the City.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

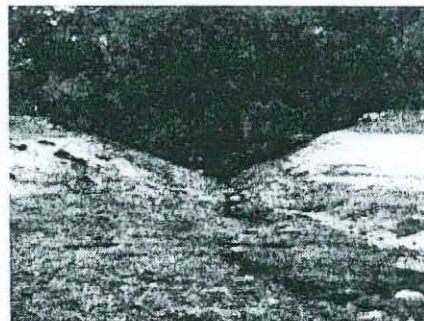
Water Quality	
Monitoring Sites	Marginal
Excellent	Poor
Very Good	Bad
Good	Very Bad
Fair	No Score

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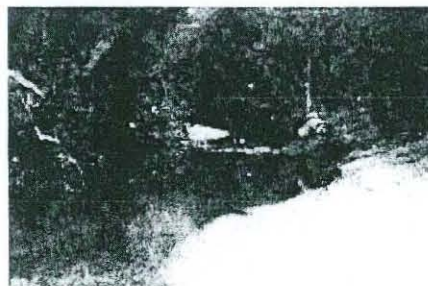
### Photo Gallery



Tannehill Creek at Bartholomew Park



Tannehill Creek upstream  
of Boggy Creek



Tannehill Creek at Desirable Drive



Tannehill Creek at Lovell Drive

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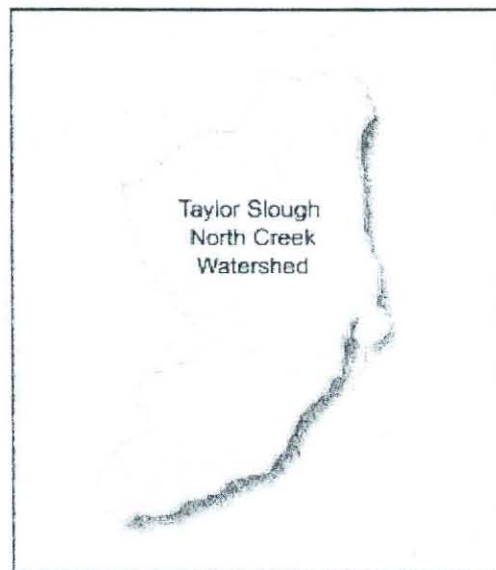
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## Austin's Watersheds


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### Fast Facts

Population	2000: 2,219	
	2030: 3,779	
Creek Length	2 miles	
Drainage Area	1 square miles	
Drains To	Lake Austin	
Well Known Sites	Perry Park, Mayfield Preserve, Mayfield Spring, Taylor	
	Slough North Spring, Highland Park Elementary School	
Land Use	Residential	40%
	Business	3%
	Civic	35%
	Parks	4%
	Roadways	15%
	Undeveloped	1%

### Watershed Facts

- The creek is often dry upstream of Pecos Street in West Austin; however, a nice large spring is located just downstream of Pecos Street so the rest of the creek has water most of the year.
- Taylor Slough North Creek mainly flows through residential areas.
- Taylor Slough North Creek watershed passes through the environmentally sensitive Northern Edwards Aquifer Recharge Zone where water travels through caves and sinkholes to "recharge" the aquifer.

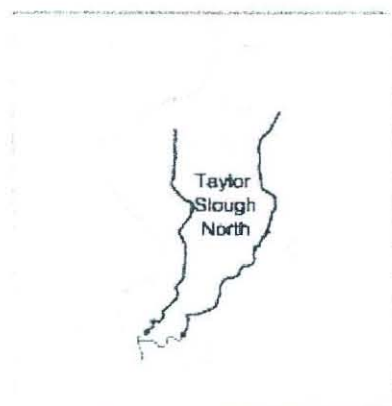
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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	57	Fair	Taylor Slough (North) ranks 33 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	59	Fair	Water quality is average, ammonia is high, orthophosphorus is high
<b>Sediment Quality</b>	49	Marginal	PAHs are very high, herbicides/pesticides are very low, metals are low
<b>Recreation</b>	70	Good	During dry weather conditions, bacteria is usually not a threat
<b>Aesthetics</b>	74	Good	Some litter present, slight offensive odor, algae covers 10-20% of creek
<b>Habitat</b>	44	Marginal	Some sediment deposition, some channel alteration, buffer zone is too small
<b>Aquatic Life</b>	48	Marginal	Benthic macroinvertebrate community is fair, diatom community is fair

- Absence of pollution-intolerant diatom species suggests water quality may be impacting aquatic life; silt and sedimentation may be impacting diatom community.
- Development near creek banks resulted in poor channel and riparian conditions.
- Elevated levels of PAH may be harmful to aquatic life.  
High nutrient levels may be result of leaking wastewater lines and residential fertilizer application.
- Staff research indicates the source of high PAH levels may be from parking lot sealants.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality	
Monitoring Sites	Marginal
Excellent	Poor
Very Good	Bad
Good	Very Bad
Fair	No Score

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### Photo Gallery



Taylor Slough North Creek at  
Old Bull Creek Road



Taylor Slough North Creek  
at Pecos Street

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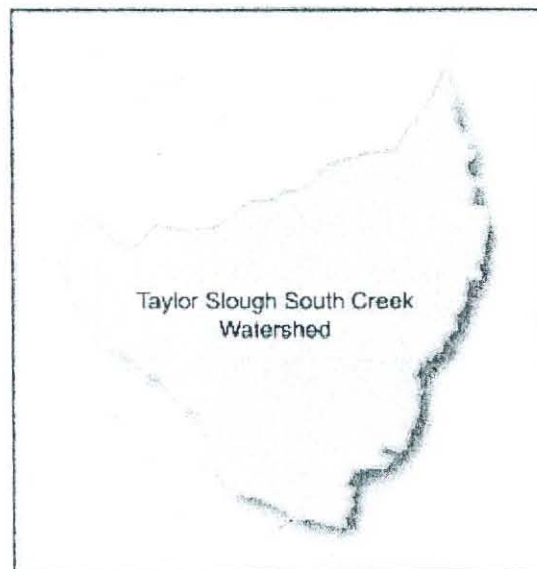
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## Austin's Watersheds

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### Fast Facts

<b>Population</b>	2000: 1,653
	2030: 2,521
<b>Creek Length</b>	1 miles
<b>Drainage Area</b>	1 square miles
<b>Drains To</b>	Lake Austin
<b>Well Known Sites</b>	Reed Park, Casis Elementary School

### Land Use

Residential	51%
Business	1%
Civic	26%
Parks	3%
Roadways	14%
Undeveloped	3%

### Watershed Facts

- The lower end of Taylor Slough South creek runs through Reed Park in West Austin and has a hiking trail leading to Lake Austin.
- 99% of the Taylor Slough South Creek watershed passes through the environmentally sensitive Northern Edwards Aquifer Recharge Zone where water travels through caves and sinkholes to "recharge" the aquifer.
- A surprising amount of groundwater discharging through springs from the aquifer provides regular water flow to Taylor Slough South.

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### Creek Assessments

#### Environmental

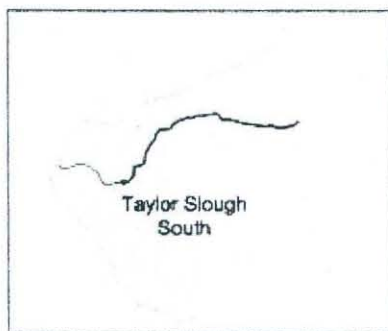
Index	Score	Category	Notes
<b>Overall Score</b>	57	Fair	Taylor Slough (South) ranks 33 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	55	Fair	Water quality is average, nitrate is high, conductivity is high, orthophosphorus is high
<b>Sediment Quality</b>	66	Good	PAHs are high, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	55	Fair	During dry weather conditions, bacteria is usually not a threat
<b>Aesthetics</b>	80	Very Good	Litter is not a problem, no odor, water is slightly cloudy, some of the creek bed is dry
<b>Habitat</b>	46	Marginal	Increased sediment deposition, cover is insufficient, some channel alteration
<b>Aquatic Life</b>	37	Poor	Benthic macroinvertebrate community is fair, diatom community is fair

- Absence of pollution-intolerant diatom species suggests water quality may be impacting aquatic life; silt and sedimentation may be impacting diatom community.
- Elevated levels of PAH may be harmful to aquatic life.
- High nutrient levels may be result of leaking wastewater lines and residential fertilizer application.
- Taylor Slough South is listed on the State 303(d) List of Impaired Waterbodies for elevated bacteria.
- Taylor Slough South is listed on the State Water Quality Inventory as being of concern for nitrate/nitrite enrichment.

- Staff research indicates the source of high PAH levels may be from parking lot sealants.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
	Monitoring Sites		Marginal
	Excellent		Poor
	Very Good		Bad
	Good		Very Bad
	Fair		No Score

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### Photo Gallery



Taylor Slough South Creek at Reed Park

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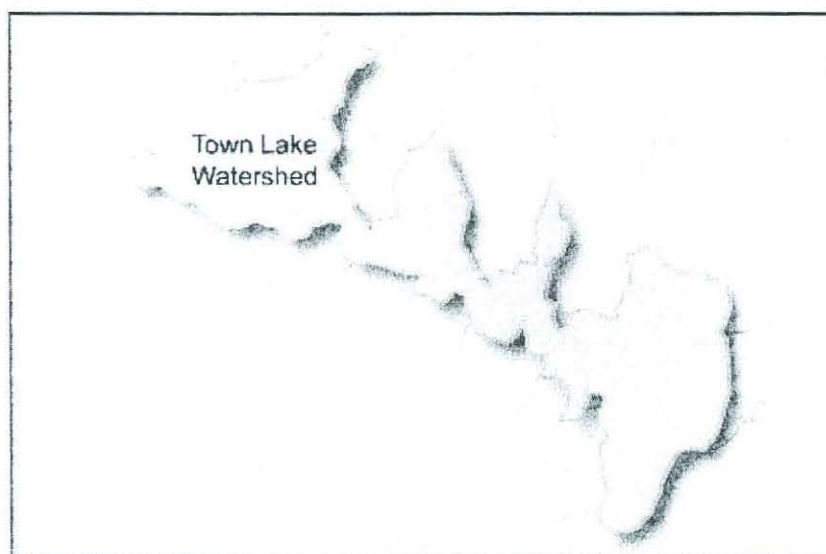
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## Austin's Watersheds


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### Fast Facts

#### Population

2000: 30,436

2030: 43,954

#### Creek Length

8 miles

#### Drainage Area

7 square miles

#### Drains To

Gulf of Mexico

#### Well Known Sites

The Capitol, Pan Am, Sanchez and Comal Park, Auditorium Shores, Town Lake Hike and Bike Trail, Town Lake Metropolitan Park, Deep Eddy Pool, Mathews Elementary, Austin High School, O Henry, Sanchez, Metz, Zavala, Blackshear, and Martin Middle Schools

Residential

36%



<b>Land Use</b>	Business	9%
	Civic	7%
	Parks	12%
	Roadways	21%
	Undeveloped	6%

### Watershed Facts

- In 1880, citizens were concerned about the laying of a sewage pipe which could pollute Town Lake
- Town Lake is actually a reservoir created in 1959 as a part of the Highland Lake chain on the Colorado River.
- Town Lake is used for energy, cooling water, drinking water, irrigation, recreation, fishing, aquatic life, and wildlife habitat
- One of worst fish kills occurred in Town lake in 1961 and was recorded in Rachel Carson's book "Silent Spring". Fish were killed through the 140 miles corridor from Austin to the Gulf of Mexico. It was determined later that a chemical company had washed pesticide containing DDT down a stormdrain in downtown Austin.
- A fish consumption advisory was removed in 1999
- There is a City ordinance against swimming in Town Lake, but this is based on dangerous currents, not water quality.
- Both Barton Springs and Cold Springs discharge into Town Lake.
- The west portion of the Town Lake watershed passes through the environmentally sensitive Edwards Aquifer Recharge Zone where water travels through caves and sinkholes to "recharge" the aquifer.
- The Congress Avenue bridge with largest urban colony of Mexican Freetail bats

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### Creek Assessments

#### Environmental

- Chlordane, although restricted by regulatory action, remains at relatively high concentrations in recent sediments in Town Lake.
- Concentrations of lead in the Town Lake core have decreased by about 70 percent since 1970
- Baseflow bacteria levels in Town Lake are usually well below contact recreation standards (200 col/100mL), but bacteria levels after storms are often elevated. Storm also bring in high levels of nutrients that can cause algae blooms during low flow periods.
- During winter Barton Spring provides much of the baseflow to Town Lake

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### Photo Gallery



Town Lake east of downtown



Town Lake downtown



Town Lake west of downtown

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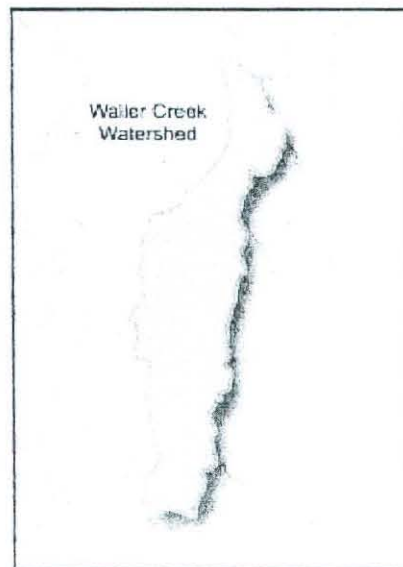
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## Austin's Watersheds


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### Fast Facts

**Population** 2000: 32,076  
2030: 42,264

**Creek Length** 7 miles

**Drainage Area** 6 square miles

**Drains To** Colorado River at Town Lake

**Well Known Sites** University of Texas, The State Capitol, Austin Convention Center, Hyde Park Neighborhood, Reilly Elementary School, Austin State Hospital, St. David's Medical Center, Seton Heart Center, Children's Hospital of Austin, Waterloo Park, Elizabeth Ney Museum

<b>Land Use</b>	Residential	31%
	Business	17%
	Civic	22%

Parks	3%
Roadways	26%
Undeveloped	3%

### Watershed Facts

- The original eastern boundary of Austin, Waller Creek was named after Edwin Waller, Austin's first mayor and signer of the Texas Declaration of Independence.
- Waller Creek has always been a focus of public attention in Austin. A young Lyndon B. Johnson walked the creek in 1938 and decried the "shanties" and "hot beds of crime".
- In response to citizen complaints, investigators find an average of 72 pollution problems each year in Waller Creek. Sewage is the most common problem, followed by sediment then wastewater.
- Waller is considered a "gaining creek", meaning that flow increases downstream, a result of springs and seeps located along the length of the creek
- Nutrient problems increase at the University of Texas campus and continue to increase downstream to the mouth.
- One of the most densely developed watersheds in Austin, the majority of impervious cover on Waller Creek was in place prior to the 1950s.

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### Creek Assessments

#### Environmental

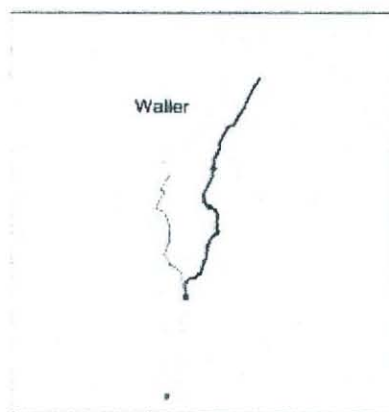
Index	Score	Category	Notes
<b>Overall Score</b>	58	Fair	Waller ranks 31 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	51	Fair	Water quality is average, conductivity is high, orthophosphorus is high
<b>Sediment Quality</b>	76	Very Good	PAHs are high, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	60	Fair	During dry weather conditions, bacteria is usually not a threat
<b>Aesthetics</b>	71	Good	Some litter is present, slight offensive odors, some of the creek bed is dry
<b>Habitat</b>	57	Fair	Some sediment deposition, major channel alteration, buffer zone is too small
<b>Aquatic Life</b>	32	Poor	Benthic macroinvertebrate community is marginal; diatom community is bad



- Non-contiguous flow regime may be attributed to a variety of factors including leaking wastewater lines and unknown storm sewer discharges.
- Portions of Waller Creek are listed on the State 303(d) List of Impaired Waterbodies for elevated bacteria, an impaired macrobenthos community, and contaminants in sediment.
- Staff research indicates the source of high PAH levels may be parking lot sealants.
- Widespread problems in Waller most likely stem from aging infrastructure and historical development which occurred prior to protective regulations.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
● Monitoring Sites	■ Excellent	■ Very Good	■ Good
■ Fair	■ Marginal	■ Poor	■ Bad
	■ Very Bad	■ No Score	

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### Photo Gallery



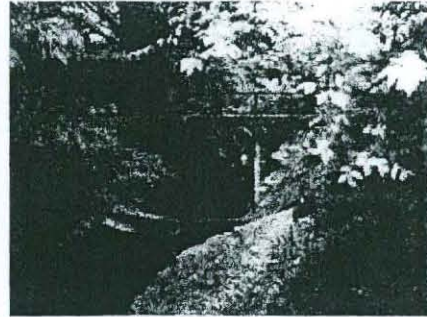
Waller Creek at 51st Street



Waller Creek below Cesar Chavez



Waller Creek at Shipe Park



Waller Creek upstream of 23rd Street

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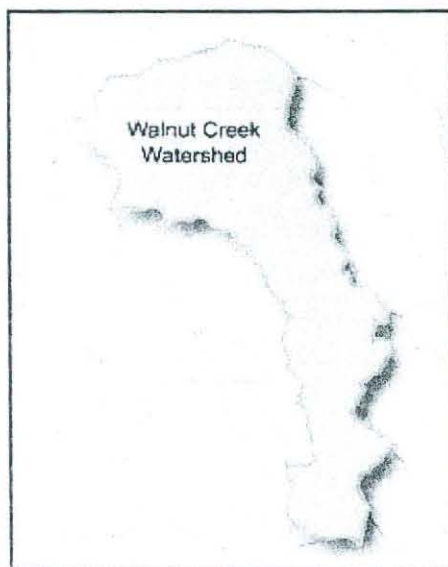
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## Austin's Watersheds

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### Fast Facts

<b>Population</b>	2000: 93,934	
	2030: 133,387	
<b>Creek Length</b>	22.34 miles	
<b>Drainage Area</b>	43.53 square miles	
<b>Drains To</b>	Colorado River below Town Lake	
<b>Well Known Sites</b>	Jourdan Bachman Pioneer Farm, ACC Northridge Campus,	
	LBJ, McNeil, and Connally high Schools, Motorola, Walnut Creek Park, Scofield Farms, North Austin Medical Center, Seton Northwest	
<b>Land Use</b>	Residential	25%
	Business	13%
	Civic	3%
	Parks	4%

Roadways	15%
Undeveloped	40%

### Watershed Facts

- This beautiful creek has five seeps and springs and thirteen caves, and is home to the golden-cheeked warbler and black -capped vireo
- The watershed crosses over from the Northern Edwards Aquifer and flows east to the rich soils of the Blackland Prairie region.
- The Walnut Creek greenbelt connects six major corporations, a college campus, and 12 neighborhoods along a 14.3 mile route
- In response to citizen complaints, investigators find an average of 72 pollution problems per year. Petroleum is the most common problem, followed by sediment.
- Walnut is the largest developed watershed in Austin and is characteristic of the transitional zone between Edwards Plateau and Blackland Prairie ecoregions

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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	71	Good	Walnut ranks 10 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	61	Fair	Water quality is average
<b>Sediment Quality</b>	75	Good	PAHs are high, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	77	Very Good	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	76	Very Good	Some litter is present, no odor, water is slightly cloudy
<b>Habitat</b>	65	Good	Some embeddedness, some channel alteration, bank vegetation is marginal
<b>Aquatic Life</b>	69	Good	Benthic macroinvertebrate community is very good; diatom community is fair

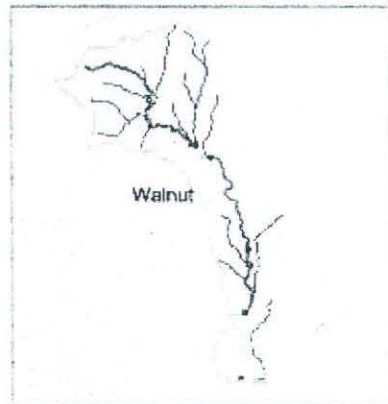
- Contact recreation scores improved in Walnut more than other watersheds in the City.
- Healthy aquatic life communities supported by perennial flow.
- Portions of Walnut are listed on the State Water Quality Inventory as being of concern for bacteria and nutrient enrichment.



- Sediment deposition may result from increasing development in combination with native soil characteristics.

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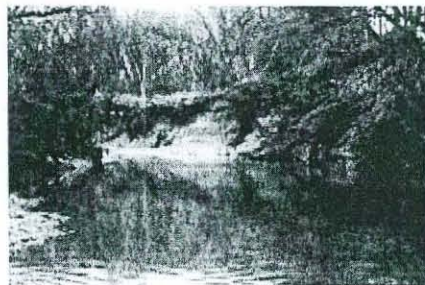


Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
● Monitoring Sites	■ Excellent	■ Very Good	■ Good
■ Fair	■ Marginal	■ Poor	■ Bad
	■ Very Bad	■ No Score	

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### Photo Gallery



Walnut Creek at the  
SP Railroad Bridge



Walnut Creek at Lamar Boulevard

[Click here for more information about Walnut Creek History](#) (City of Austin is not responsible for any content on the linked page)

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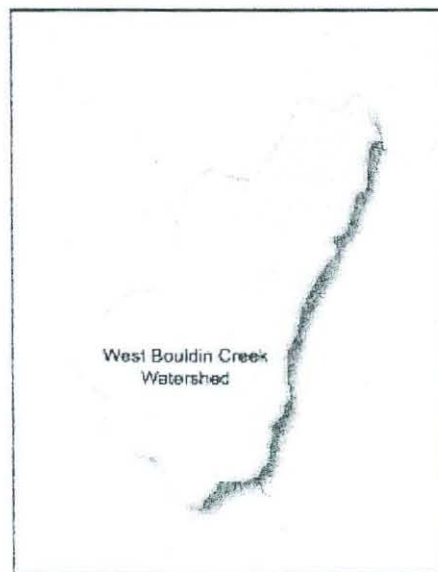
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## Austin's Watersheds


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### Fast Facts

<b>Population</b>	2000: 16,951
	2030: 19,337
<b>Creek Length</b>	4 miles
<b>Drainage Area</b>	3 square miles
<b>Drains To</b>	Colorado River at Town Lake
<b>Well Known Sites</b>	South Austin Recreation Center, Zilker, Galindo, Becker
	Elementary Schools, Porter Middle School, Auditorium
	Shores, Zilker neighborhood, The Green Classroom, St. Davids South

<b>Land Use</b>	Residential	50%
	Business	12%
	Civic	6%
	Parks	1%

Roadways	21%
Undeveloped	10%

### Watershed Facts

- West Bouldin Creek is named after James and Molinda Bouldin who moved here in 1852. Their plantation stretched from the Colorado River to William Cannon Boulevard with their homestead at the current site of Becker Elementary. Their gristmill was converted to a home at the corner of East Mary and Evergreen.
- West Bouldin Creek winds through South Austin and enters Town Lake near Auditorium Shores.
- Shale deposits along portions of the creek are a good place to find fossils of fish and other creatures.
- In response to citizen complaints, investigators find an average of 27 pollution problems each year in West Bouldin Creek. Sewage is the most common problem, followed by petroleum and sediment.
- Although significantly larger than neighboring East Bouldin Creek, West Bouldin maintains much less baseflow. (2001 Water Watchdogs EII Phase 1 Watersheds Report (monitoring conducted in 2000))
- The overall water quality is good for a developed watershed\*

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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	53	Fair	West Bouldin ranks 44 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	54	Fair	Water quality is average, conductivity is high, suspended solids are high
<b>Sediment Quality</b>	57	Fair	PAHs are low, herbicides/pesticides are high, metals are low
<b>Recreation</b>	54	Fair	During dry weather conditions, bacteria is usually not a threat
<b>Aesthetics</b>	69	Good	Lots of litter present, no odor, algae covers 10-20% of creek, some of the creek bed is dry
<b>Habitat</b>	53	Fair	Some sediment deposition, cover is insufficient, some channel alteration, bank stability is marginal, bank vegetation is marginal, buffer zone is small
			Benthic macroinvertebrate community

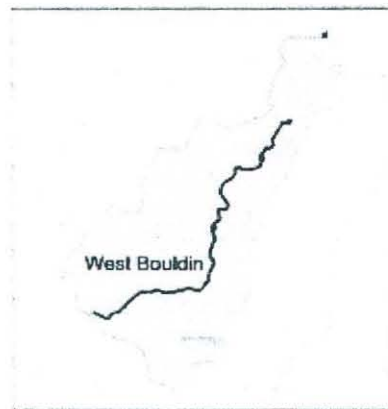
**Aquatic Life**

28

Poor

is bad; diatom community is poor

- Limited baseflow and more undeveloped riparian areas unusual for an urban watershed.
- Poor aquatic life communities due to lack of baseflow.
- Preliminary Engineering for flood, erosion, stream restoration, and water quality retrofits nearing completion.

[Learn More](#)[How to Help](#)

Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality	
● Monitoring Sites	■ Marginal
■ Excellent	■ Poor
■ Very Good	■ Bad
■ Good	■ Very Bad
■ Fair	■ No Score

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West Bouldin Creek at Guerrero Park



West Bouldin Creek at Jewell





West Bouldin Creek  
at Riverside Drive



West Bouldin Creek  
at South Austin Park

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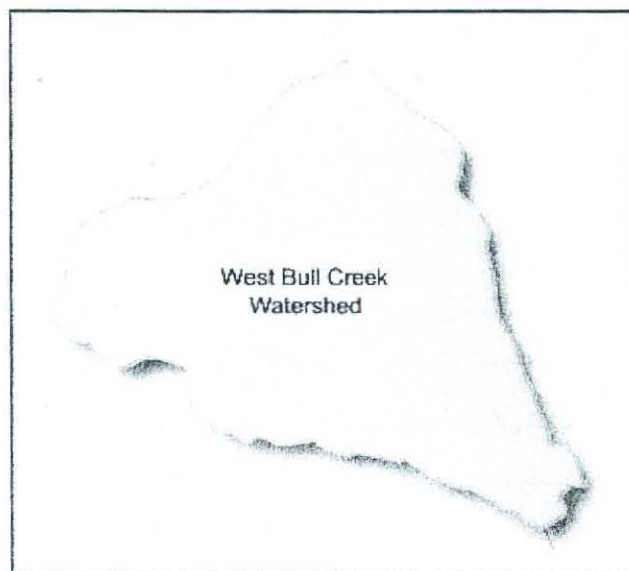
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### Fast Facts

<b>Population</b>	2000: 2,446	
	2030: 10,987	
<b>Creek Length</b>	5 miles	
<b>Drainage Area</b>	7 square miles	
<b>Drains To</b>	Bull Creek near Lake Austin	
<b>Well Known Sites</b>	West Bull Creek Park	
<b>Land Use</b>	Residential	16%
	Business	0%
	Civic	0%
	Parks	1%
	Roadways	5%
	Undeveloped	78%

### Watershed Facts

- West Bull Creek has a high resource value and excellent water quality.
- There is a considerable amount of development going on in this watershed, which has the potential to degrade the character of the stream.
- West Bull Creek watershed passes through the environmentally sensitive Edwards Aquifer Recharge Zone where water travels through caves and sinkholes to "recharge" the aquifer.
- West Bull is a classic high gradient Hill Country stream of the Edwards Plateau, with relatively small and recent development.

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### Creek Assessments

#### Environmental

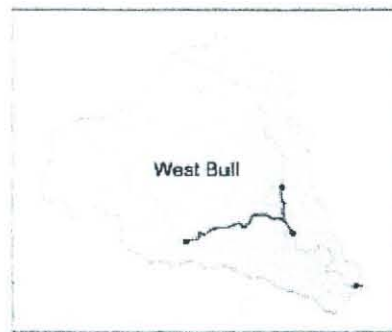
Index	Score	Category	Notes
<b>Overall Score</b>	77	Very Good	West Bull ranks 4 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	67	Good	Water quality is above average
<b>Sediment Quality</b>	91	Excellent	PAHs are very low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	91	Excellent	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	86	Very Good	Litter is not a problem, no odor
<b>Habitat</b>	50	Marginal	Some sediment deposition, some channel alteration
<b>Aquatic Life</b>	79	Very Good	Benthic macroinvertebrate community is good, diatom community is excellent

- Increasing residential development will impact future West Bull water quality.
- Lower portion of watershed impacted by heavy transportation landuse.
- Presence of pollution-intolerant diatom species suggest healthy community.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.



Water Quality	
● Monitoring Sites	○ Marginal
■ Excellent	○ Poor
■ Very Good	○ Bad
■ Good	■ Very Bad
■ Fair	■ No Score

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### Photo Gallery



West Bull Creek above Bull Creek



West Bull Creek at Bell Mount Road

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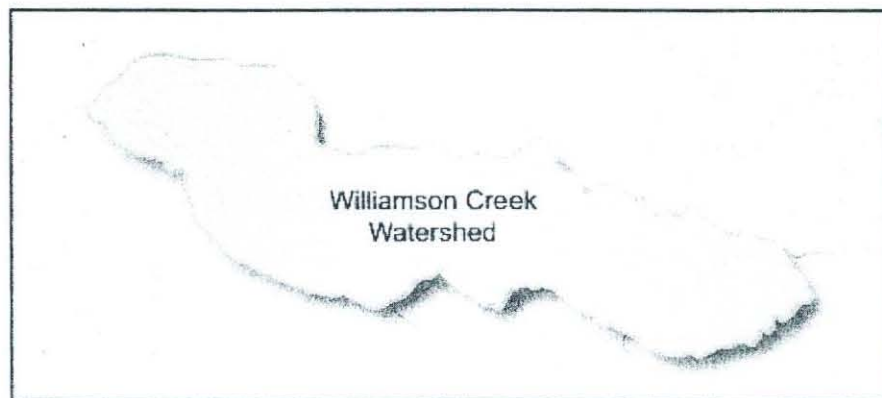
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### Fast Facts

<b>Population</b>	2000: 92,922
	2030: 129,514
<b>Creek Length</b>	19 miles
<b>Drainage Area</b>	30 square miles
<b>Drains To</b>	Colorado River east of Austin through Onion Creek
<b>Well Known Sites</b>	Dick Nichols District Park, Jimmy Clay Golf Course, Garrison Park, The "Y" in Oak Hill, Crockett High School, Stephenson Preserve, Blowing Sink Karst Preserve, Seton Southwest
<b>Land Use</b>	Residential 33%
	Business 7%
	Civic 3%
	Parks 6%
	Roadways 14%
	Undeveloped 37%

### Watershed Facts

- Williamson Creek has characteristics of a developing watershed with a moderate amount of impervious cover (paved surfaces), and has a high potential for future impervious cover increases from additional development.
- The watershed encompasses over 30 square miles, and is Austin's second largest suburban watershed. Williamson Creek flows downstream to McKinney Falls, Onion Creek and eventually to the Colorado River.
- The upper reaches of the creek recharge the Edwards Aquifer, and scientists believe that at one time Barton Creek was a tributary of Williamson Creek.
- Williamson Creek is home to many beautiful caves including Whirlpool Cave and District Park Cave in Dick Nichols Park.
- In response to citizen complaints, investigators find an average of 90 pollution problems each year in Williamson Creek. Sewage is the most common problem, followed by petroleum and trash
- Water quality is good to excellent\* (2001 Water Watchdogs EII Phase 1 Watersheds Report (monitoring conducted in 2000))

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### Creek Assessments

#### Environmental

Index	Score	Category	Notes
<b>Overall Score</b>	69	Good	Williamson ranks 13 out of 46 watersheds in overall quality
<b>Water Chemistry</b>	63	Good	Water quality is above average
<b>Sediment Quality</b>	80	Very Good	PAHs are low, herbicides/pesticides are very low, metals are very low
<b>Recreation</b>	89	Excellent	During dry weather conditions, bacteria is not a threat
<b>Aesthetics</b>	73	Good	Some litter is present, no odor, algae covers 10-20% of creek, some of the creek bed is dry
<b>Habitat</b>	66	Good	Increased sediment deposition, buffer zone is small
<b>Aquatic Life</b>	43	Marginal	Benthic macroinvertebrate community is poor; diatom community is fair

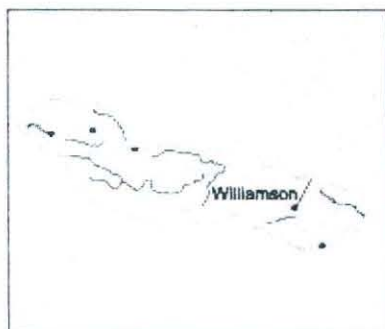
- The US Corps of Engineers is planning projects for flood and ecosystem restoration; this may result in federal funding for projects that improve water quality and aquatic life.
- Corps of Engineers project plan includes flood control and stream restoration

projects with potential to improve riparian and stream habitat.

- Project increases in population and development could double the current level of impervious cover by 2040.
- Recharge zone bisects watershed and influences local hydrology of creek.

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Environmental scores are based on a full range of chemical, biological, and physical assessments.

Water Quality			
●	Monitoring Sites	○	Marginal
■	Excellent	■	Poor
■	Very Good	■	Bad
■	Good	■	Very Bad
■	Fair	■	No Score

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### Photo Gallery



Williamson Creek at Highway 71



Williamson Creek at Joe Tanner



Williamson Creek at Mowinkle Drive



Williamson Creek at McKinney Falls



Williamson Creek at McKinney Falls

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