

Chapter 2.10 Lower Colorado River Watershed Management Unit Assessment

2.10.1. Introduction

The Lower Colorado River Watershed Management Unit includes all streams located in the U.S.G.S. Hydrological Units (HUCs) listed in Table 2.10-1. Some of the major streams are the Santa Clara River, Virgin River, East Fork of the Virgin River, North Fork of the Virgin River, North Creek, Kanab Creek and Laverken Creek.

Table 2.10-1 U.S.G.S. Hydrological Units in the Lower Colorado Watershed Management Unit

Hydrological Unit Code	Hydrological Unit Name
15010003	Kanab
15010008	Upper Virgin
15010009	Fort Pierce Wash
15010010	Lower Virgin

2.10.2. Water Quality Assessment Results

Results of the 2006 Integrated Report were used to assess the waters. Data collected since the intensive survey was included in the assessment. Water chemistry and field data are compared against State standards to do the assessment. In addition, benthic macroinvertebrate data were used to assess aquatic life beneficial use support under the narrative standard (Chapter 2.15).

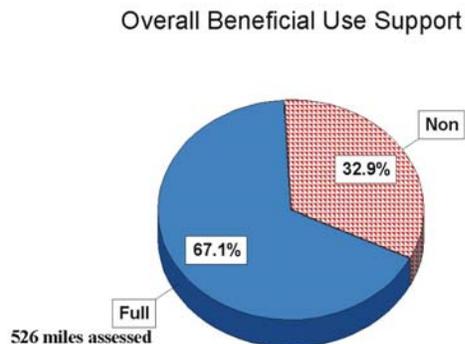


Figure 2.10-1 Overall Beneficial Use Support

2.10.2.1 Overall Beneficial Use Support

Figure 2.10-2 is a map of the designated beneficial uses assigned to streams in this watershed management unit. An assessment of support for at least one beneficial use was made for 526.2 stream miles. Of those assessed, 353.3 miles (67.1%) were assessed as

fully supporting all the beneficial uses assessed and 172.9 (32.9%) were assessed as not supporting at least one designated beneficial use. The overall beneficial use support is shown in Figure 2.10-1.

2.10.2.2 Beneficial Use Assessment By Categories

The beneficial uses assigned to streams in unit are illustrated in Figure 2.10-2. The number of stream miles assessed by categories is listed in Table 2.10-2. Figure 2.8-3 is a map of the beneficial use assessment results by categories.

Table 2.10-2 Stream Miles by Assessment Category – Lower Colorado Watershed Management Unit

Category	Category Definition	Stream Miles
1	All beneficial uses fully supported.	
2	Beneficial uses assessed are fully supported.	353.31
3A	No data or insufficient data to make an assessment.	86.05
3B	Lakes that are not supported for one cycle only.	
3C	Insufficient data to assess but an assessment plan is in place.	
4A	Approved TMDL	23.67
4B	Pollution control requirements are expected to result in full beneficial use support in near future.	
4C	Impaired by pollution, no TMDL required.	
5	Impaired by pollutant, TMDL required.	172.9

2.10.2.3--Individual Beneficial Use Support

Individual beneficial use assessments are listed in Table 2.10-3. These include aquatic life use, agriculture and drinking water.

Table 2.10-3 Stream Miles by Assessment Category – Lower Colorado Watershed Management Unit

	Size	Size Fully	Size Not	
Use	Assessed	Supporting	Supporting	Totals
Drinking Water	210.25	210.25		210.25
Fish Consumption	0	0	0	0
Swimming	0	0	0	0
Secondary Contact	0	0	0	0
Aquatic Life	522.87	417.89	104.98	522.87
Agricultural	424.49	314.87	109.62	424.49
Drinking Water		100.0%	0	100/0
Fish Consumption		0	0	0
Swimming		0	0	0
Secondary Contact		0	0	0
Aquatic Life		79.9%	20.1%	100.0%
Agricultural		74.2%	25.8%	100.0%

2.10.2.4--Total Waters Impaired by Various Causes

The causes of impairment are listed in Table 2.10-4. The causes of impairment are metals, temperature, total dissolved solids. The relative impact of these causes is shown in Figure 2.10-5.

2.10.2.5--Total Waters Impaired by Various Sources

The number of stream miles impacted by sources are listed in Table 2.10-5. The major sources of impairment were agricultural activities, hydromodification, drought, natural sources and urban runoff as shown in Figure 2.10-6. The relative percent impairment by sources is illustrated in Figure 2.10-7.

2.10.2.6 Impaired Assessment Units

Table 2.10-6 is a list of the impaired waters in the Lower Colorado Watershed Management Unit.

Lower Colorado River Management Unit

Beneficial Use Classification and Monitoring Sites

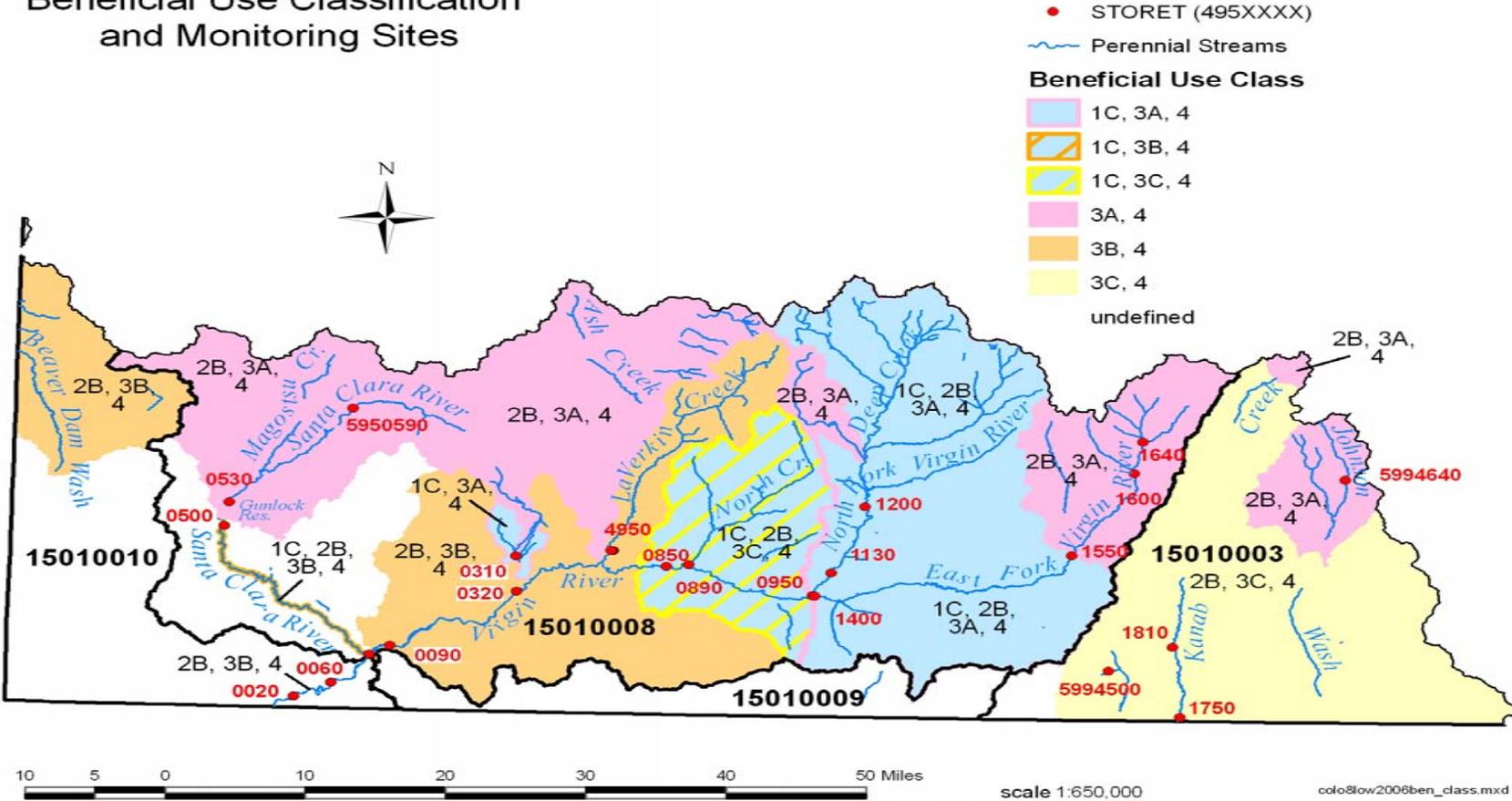


Figure 2.10-2 River and stream designated beneficial use classes – Lower Colorado Watershed Management Unit

Lower Colorado River Management Unit

Assessment Categories 2008

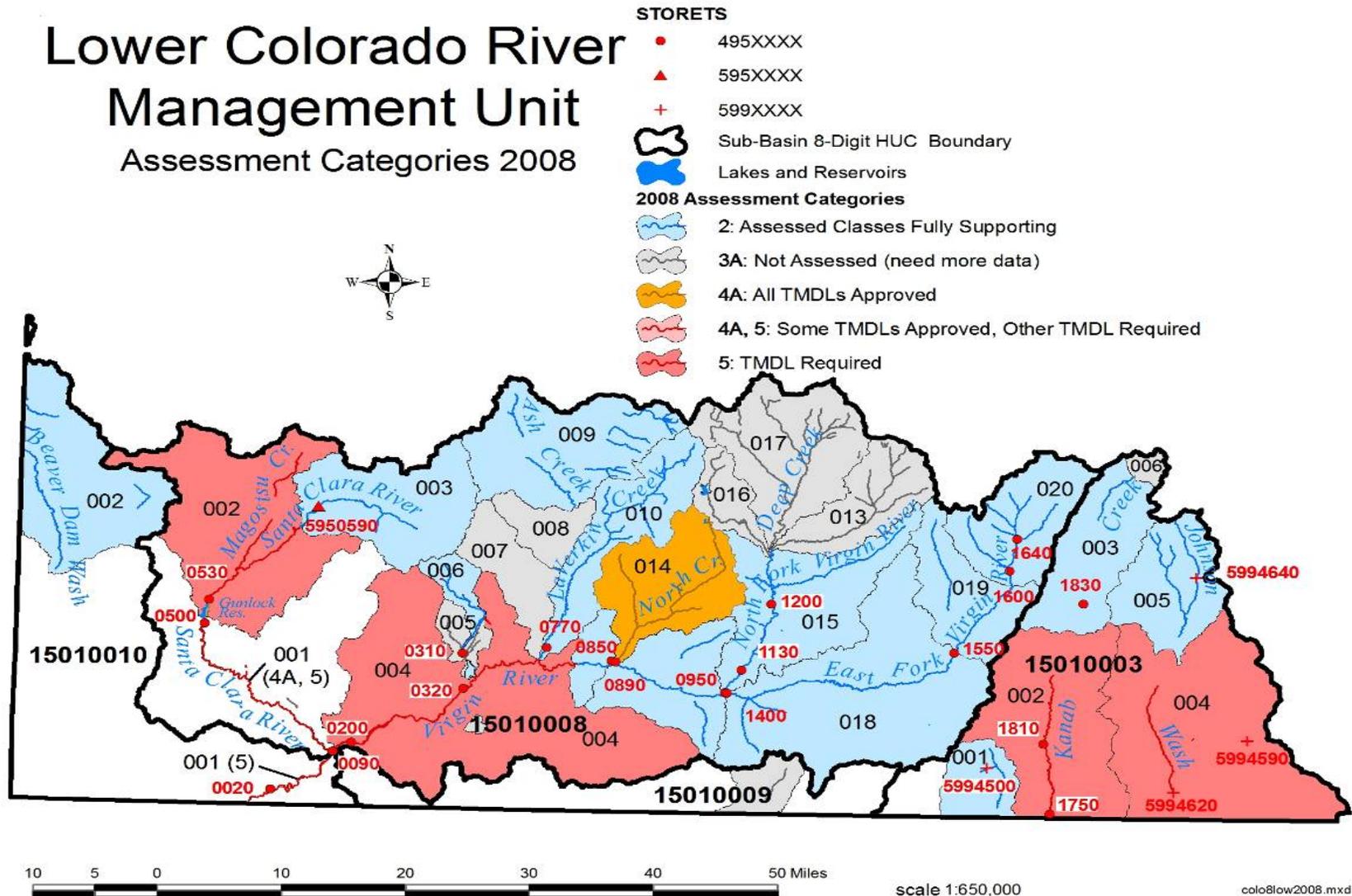


Figure 2.10-3 River and stream assessment by category – Lower Colorado Watershed Management Unit

Table 2.10-4 Total Waters Impaired by Various Cause Categories - Lower Colorado Watershed Management Unit

Cause Category	Stream Miles
Benthic macroinvertebrate assessment impairment	
E. coli	
Flow Alteration	
Metals	80.02
Organic Enrichment/Low DO	
Other Habitat Alterations	
pH	
Radiation	
TDS	53.27
Siltation	
Temperature	104.98
Total Phosphorus	
Unionized Ammonia	

Table 2.10-5 Total Waters Impaired by Various Source Categories - Lower Colorado Watershed Management Unit

Source Category	Stream Miles
Agriculture	109.62
Aquaculture	
Construction	
Drought	104.98
Habitat Modification (other than Hydromodification)	
Hydromodification	23.67
Industrial Point Sources	
Land Development	
Municipal Point Sources	
Natural Sources	97.66
Resource Extraction	
Septic	
Source Unknown	
Sources outside State Jurisdiction or Borders	
Urban Runoff/Storm Sewers	23.67

Percent of Stream Miles Affected By Causes 2008 Lower Colorado 305(b) Assessment

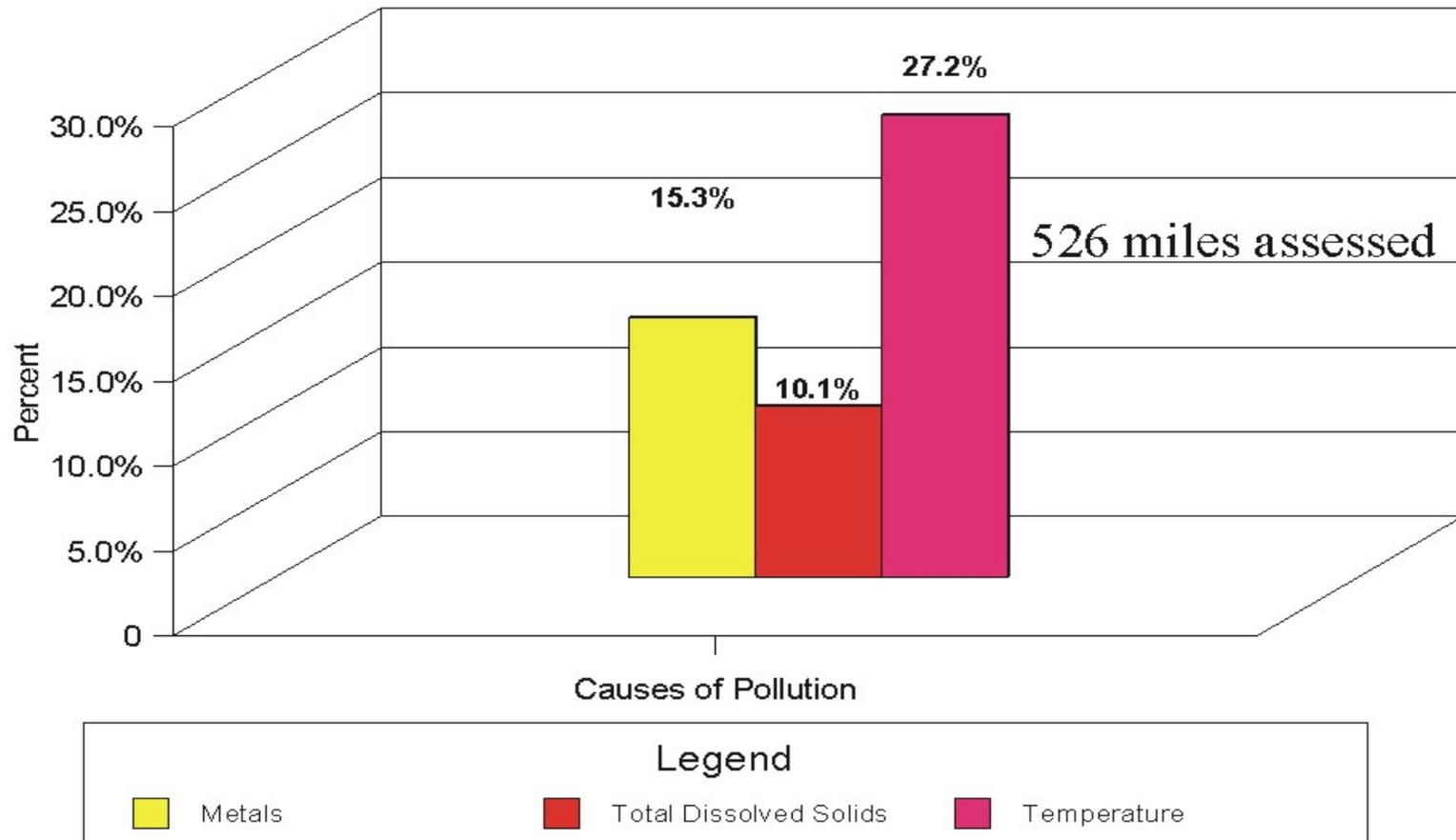


Figure 2.10-4 Percent of assessed stream miles impacted by various causes – Lower Colorado Watershed Management Unit

Causes of Stream Water Quality Impairments

2008 Assessment Lower Colorado River

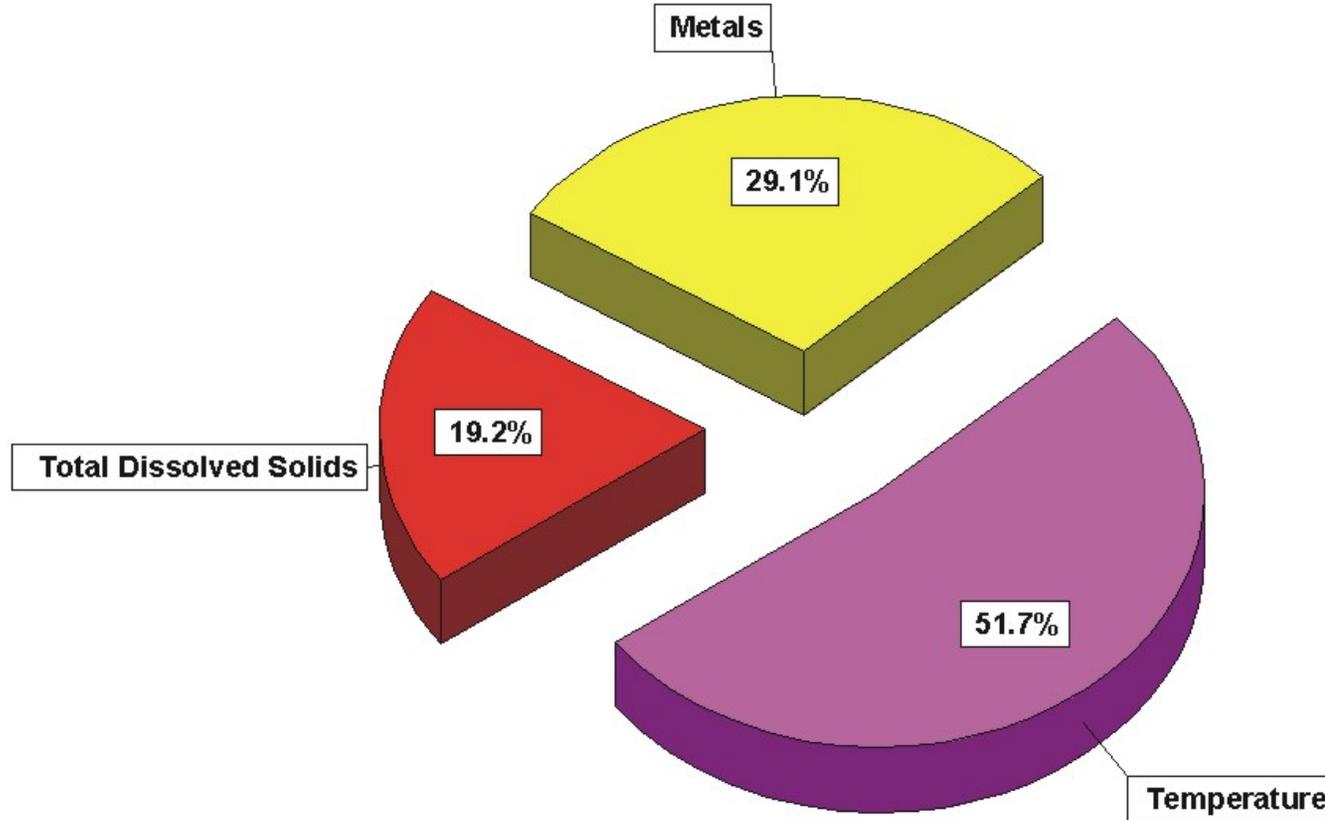


Figure 2.10-5 Relative percent impact by causes on water quality – Lower Colorado Watershed Management Unit

Percent of Stream Miles Affected By Causes 2008 Lower Colorado 305(b) Assessment

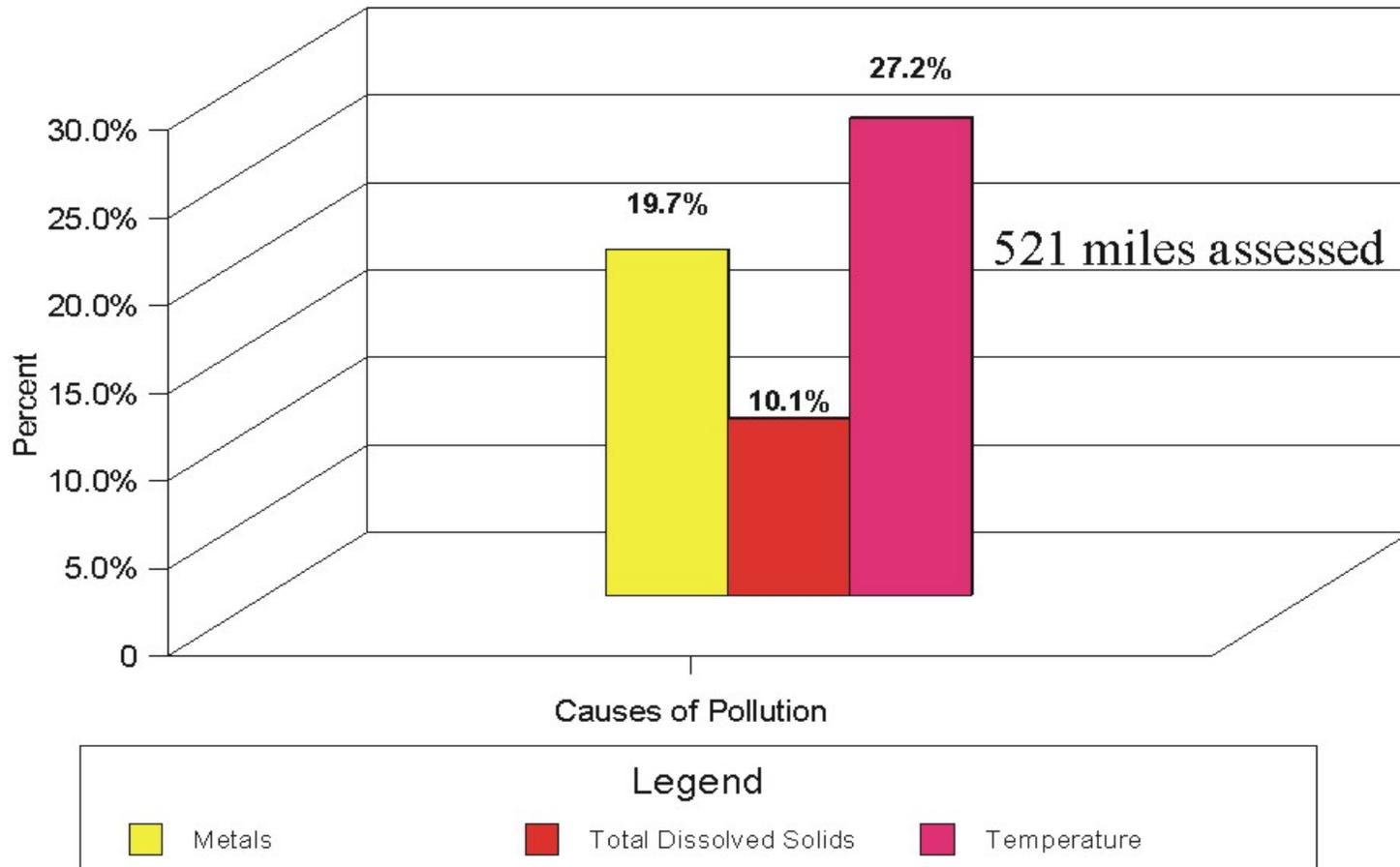


Figure 2.10-6 Percent of assessed stream miles impacted by various sources – Lower Colorado Watershed Management Unit

Sources of Stream Water Quality Impairment 2008 305(b) Assessment - Lower Colorado

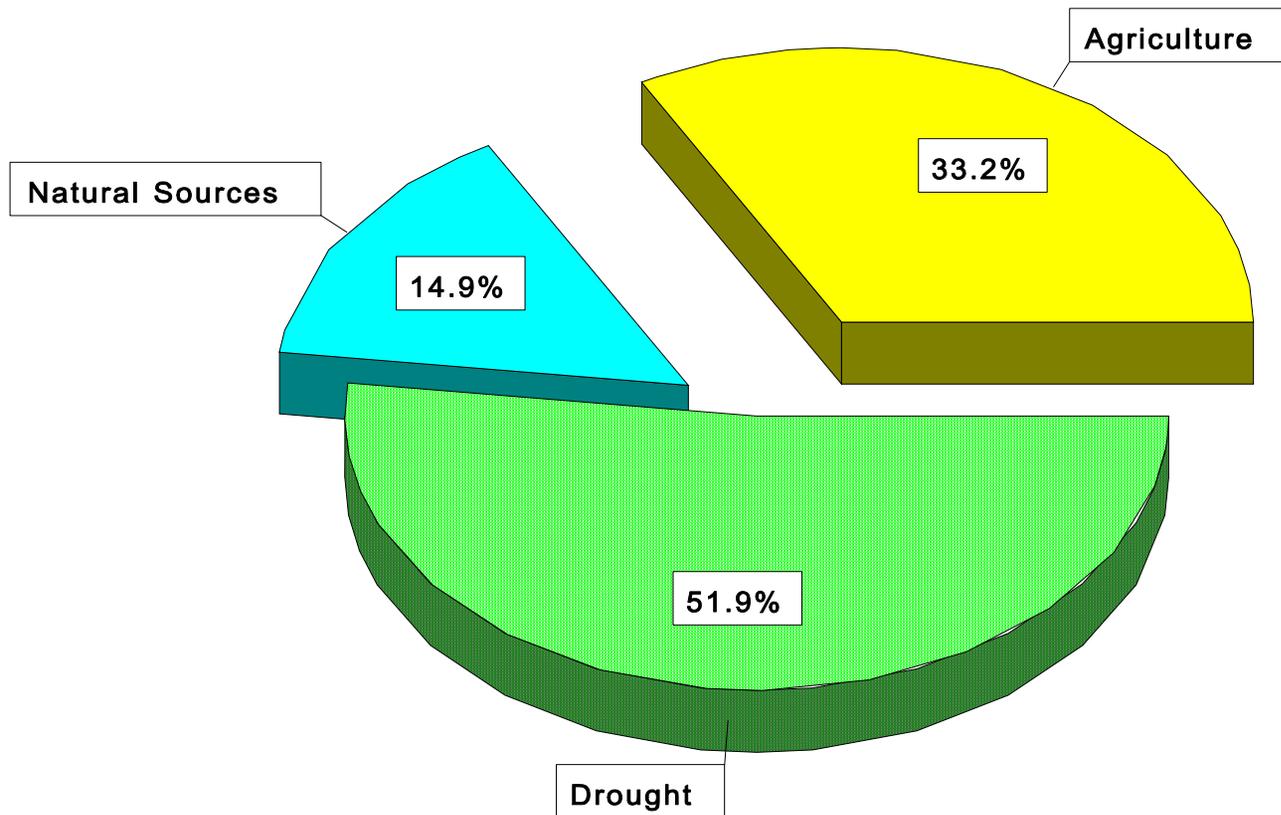


Figure 2.10-7 Relative percent impact by sources on stream water quality – Lower Colorado Watershed Management Unit

Table 2.10-6 Impaired Assessment Units in the Lower Colorado Watershed Management Unit

	Assessment	Assessment	Assessment	Beneficial Use	Beneficial		Pollutant	
	Unit	Unit	Unit	Class	Use	Support	Or	Stream
	ID	Name	Description	Impaired	Support	Category	Pollution	Miles
Lower Colorado River	UT15010003-002	Kanab Creek-1	Kanab Creek and tributaries from state line to the confluence with Fourmile Hollow near the White Cliffs	4	NS	5	TDS	23.67
Lower Colorado River	UT15010003-004	Johnson Wash-1	Johnson Wash and tributaries from Utah-Arizona state line to Skutumpah Canyon confluence	4	NS	5	TDS	23.67
Lower Colorado River	UT15010008-001	Santa Clara-1	Santa Clara River from confluence with Virgin River to Gunlock Reservoir	3B	NS	5	Temperature	17.64
Lower Colorado River	UT15010008-001	Santa Clara-1	Santa Clara River from confluence with Virgin River to Gunlock Reservoir	4	NS	5	Boron	11.96
Lower Colorado River	UT15010008-002	Santa Clara-2	Santa Clara River and tributaries from Gunlock Reservoir to Baker Dam Reservoir (includes Magotsu Creek)	3A	NS	5	Temperature	23.67
Lower Colorado River	UT15010008-004	Virgin River-2	Virgin River and tributaries from Santa Clara River confluence to Quail Creek diversion, excluding Quail, Ash, and La Verkin Creeks	3B	NS	5	Temperature	23.67
Lower Colorado River	UT15010008-004	Virgin River-2	Virgin River and tributaries from Santa Clara River confluence to Quail Creek diversion, excluding Quail, Ash, and La Verkin Creeks	4	NS	5	Boron	24.96
Lower Colorado River	UT15010010-001	Virgin River-1	Virgin River from state line to Santa Clara River confluence	3B	NS	5	Temperature	15.242
Lower Colorado River	UT15010010-001	Virgin River-1	Virgin River from state line to Santa Clara River confluence	4	NS	5	Boron	15.242
Lower Colorado River	UT15010003-002	Kanab Creek-1	Kanab Creek and tributaries from state line to the confluence with Fourmile Hollow near the White Cliffs	4	NS	5	TDS	38.32
Lower Colorado River	UT15010003-004	Johnson Wash-1	Johnson Wash and tributaries from Utah-Arizona state line to Skutumpah Canyon confluence	4	NS	5	TDS	15.24
Lower Colorado River	UT15010008-001	Santa Clara-1	Santa Clara River from confluence with Virgin River to Gunlock Reservoir	3B	NS	5	Temperature	15.24
Lower Colorado River	UT15010008-001	Santa Clara-1	Santa Clara River from confluence with Virgin River to Gunlock Reservoir	4	NS	5	Boron	15.24