

## Chapter 2.12 Colorado River Southeast Watershed Management Unit

### 2.12.1 Introduction

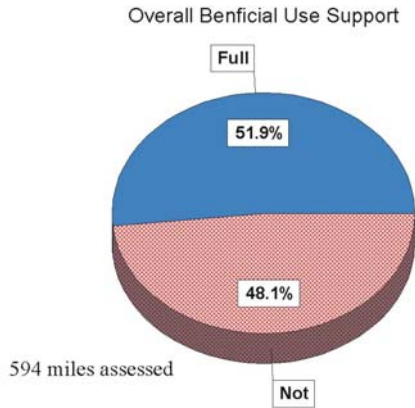
The Colorado River Southeast Watershed Management Unit includes all streams located in the U.S.G.S. Hydrological Units (HUCs) listed in Table 2.12-1. Some of the major streams are the San Juan River, Dolores River, Mill Creek, Montezuma Creek, La Sal River, Geyser Creek and part of the Colorado River.

Table 2.12-1 U.S.G.S. Hydrological Units in the Colorado River Southeast Watershed Management Unit

Hydrological Unit Code	Hydrological Unit Name
14010005	Colorado Headwaters/Plateau Utah
14030001	Westwater Canyon
14030002	Upper Delores
14030004	Lower Delores
14030005	Upper Colorado-Kane Springs
14070006	Lower Lake Powell
14070007	Paria
14080201	Lower San Juan-Four Corners Southeast
14080202	McElmo
14080203	Montezuma
14080204	Chinle
14080205	Lower San Juan

### 2.12.2 Water Quality Assessment Results

Data for this assessment was collected from January 1, 2002 through December 31, 2006 including the intensive survey (2003-2004). Benthic macroinvertebrate data were also used in making beneficial use assessments based upon State narrative criteria (Chapter 2.15). Figure 2.12-2 is a map of the designated beneficial uses assigned to the rivers and streams in this management unit.



**Figure 2.12-1 Overall Beneficial Use Support**

### 2.12.2.1 Overall Beneficial Use Support

An assessment for at least one beneficial use was made for 594.3 miles. Of those assessed, 285.9 miles (51.9%) are fully supporting all the beneficial uses assessed. Two-hundred eighty-five (48.1%) miles are not supporting at least one beneficial use. Figure 2.12-1 displays the beneficial use percentage assessment.

### 2.12.2.2 Beneficial Use Assessment by Category

A list of the categories and the stream miles included in each of the assessment categories is in Table 2.12-2

**Table 2.12-2 Stream Miles by Assessment Category - Colorado River Southeast Watershed Management Unit**

Category	Category Definition	Stream Miles
1	All beneficial uses fully supported.	
2	Beneficial uses assessed are fully supported.	308.3
3A	No data or insufficient data to make an assessment.	206.19
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	78.94
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.	222.24

### 2.12.2.3 Individual Use Support

Table 2.12-3 lists the beneficial use support by individual beneficial use class. Of the 594 stream miles assessed for aquatic life, 308.3 miles (51.9%) are fully supporting and 285.97 miles (48.1%) are not supporting this beneficial use. Of the stream miles assessed for agricultural use, 435.7 miles (78.6%) are fully supporting, and 118.88 miles (21.4%) are not supporting this beneficial use. There are 365.89 stream miles (94.4%) fully supporting the drinking water beneficial use and 21.79 miles not supporting it.

**Table 2.12-3 Individual Use Support Summary - Colorado River Southeast Watershed Management Unit**

	<b>Size</b>	<b>Size Fully</b>	<b>Size Not</b>	
	<b>Assessed</b>	<b>Supporting</b>	<b>Supporting</b>	<b>Totals</b>
<b>Use</b>				
Drinking Water	387.68	365.89	21.79	387.68
Fish Consumption				
Swimming				0
Secondary Contact				0
Aquatic Life	594.27	391.82	202.45	594.27
Agricultural	554.58	435.7	118.88	554.58
Overall	594.27	308.3	285.97	594.27
Drinking Water		94.4%	0.0%	100.0%
Fish Consumption				
Swimming				
Secondary Contact				
Aquatic Life		65.9%	34.1%	100.0%
Agricultural		78.6%	21.4%	100.0%
Overall		51.9%	48.1%	100.0%

#### **2.12.2.4 Total Waters Impaired by Various Causes**

Table 2.12-4 lists the miles of streams affected by the various causes identified as generally affecting water quality. Figure 2.12-4 illustrates the percent of stream miles affected by various causes of pollution. The causes of impairment include metals (selenium), total dissolved solids, thermal modification, and radiation (gross alpha). Figure 2.12-5 illustrates the relative percent of stream miles affected by various causes of water quality impairment.

#### **2.12.2.5 Total Waters Impaired by Various Sources**

Table 2.12-5 is a list of the various sources that impacted water quality. The percent of stream miles affected by various sources is shown in Figure 2.12-6. The relative impact of each source is shown in Figure 2.12-7. The sources of impairment are agricultural activities and natural sources. Resource extraction from uranium mining is the source of gross alpha contamination.

#### **2.12.2.6 Impaired Assessment Units**

Table 2.12-6 is a list of the impaired waters in the Colorado River Southeast Watershed Management Unit.

# Colorado River Southeast Management Unit

## Beneficial Use Classification and Monitoring Sites

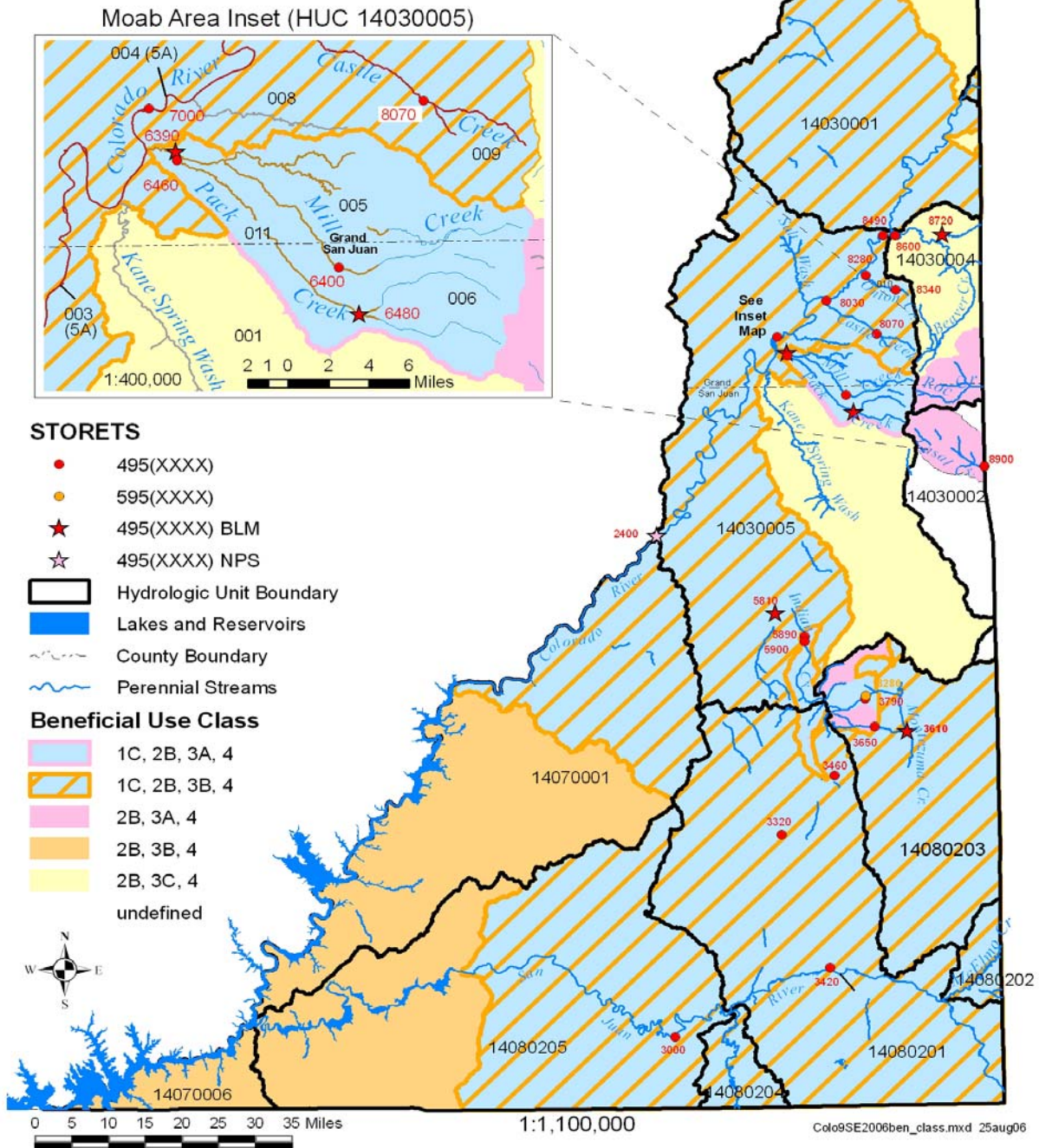


Figure 2.12-2 Beneficial use classifications – Colorado River Southeast Watershed Management Unit

# Colorado River Southeast Management Unit Assessment Categories 2008

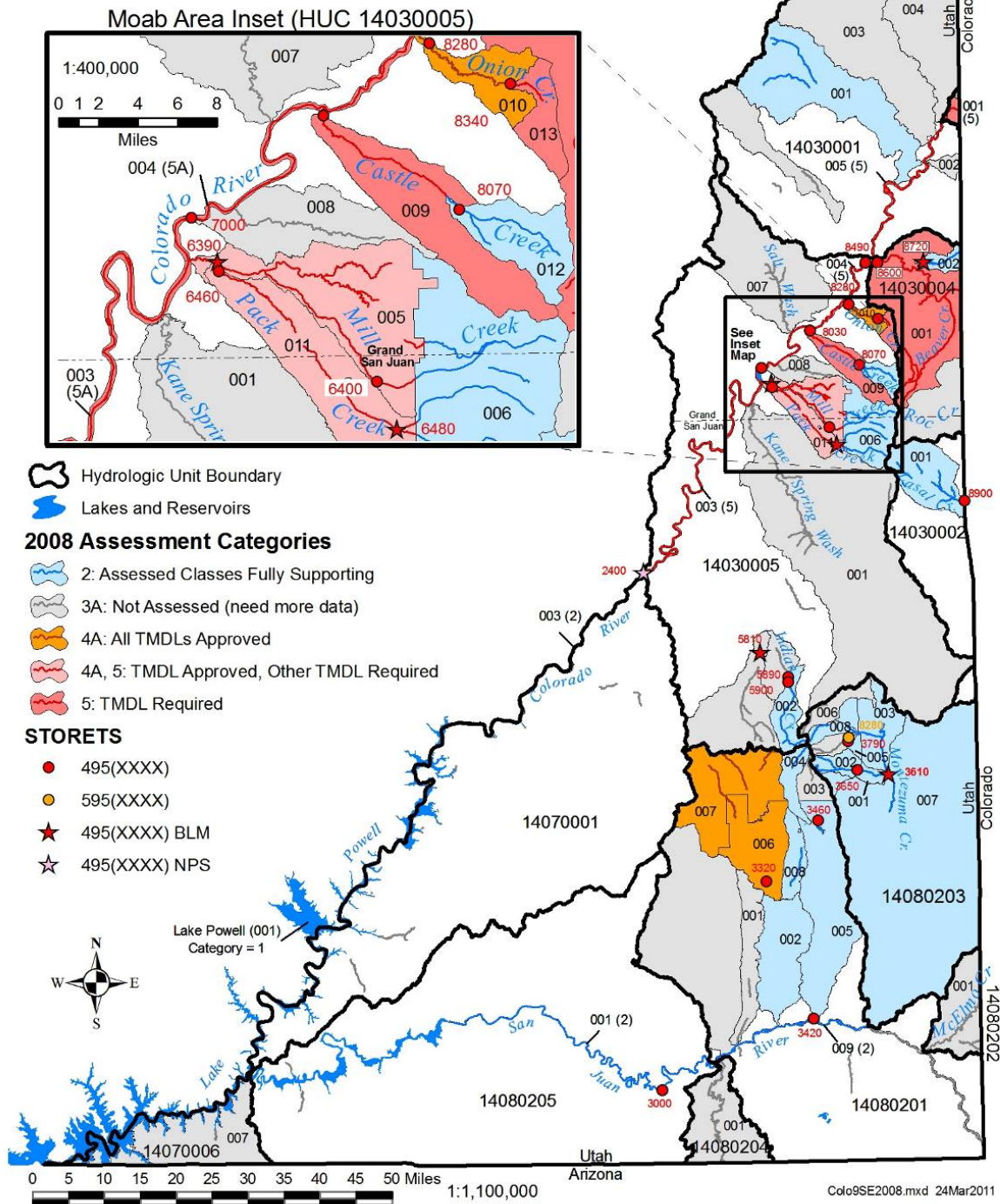


Figure 2.12-3 Beneficial use assessment by category – Colorado River Southeast Watershed Management Unit

**Table 2.12-4 Total Waters Impaired by Various Cause Categories (Stream Miles) - Colorado River Southeast Watershed Management Unit**

Cause Category	Stream Miles
Benthic macroinvertebrate assessment impairment	9.1
E. coli	
Flow Alteration	
Metals	136.2
Organic Enrichment/Low DO	
Other Habitat Alterations	
pH	
Radiation	21.79
TDS	118.88
Siltation	
Temperature	57.15
Total Phosphorus	
Unionized Ammonia	

**Table 2.12-5 Total Waters Impaired by Various Source Categories (Stream Miles) – Colorado River Southeast Watershed Management Unit**

Source Category	Stream Miles
Agriculture	57.15
Aquaculture	
Construction	
Drought	57.15
Habitat Modification (other than Hydromodification)	
Hydromodification	
Industrial Point Sources	
Land Development	
Municipal Point Sources	
Natural Sources	57.15
Resource Extraction	21.79
Septic	
Source Unknown	70.83
Sources outside State Jurisdiction or Borders	136.2
Urban Runoff/Storm Sewers	

# Percent of Stream Miles Affected By Causes

2008 Integrated Report Assessment - Colorado River Southeast Management Unit

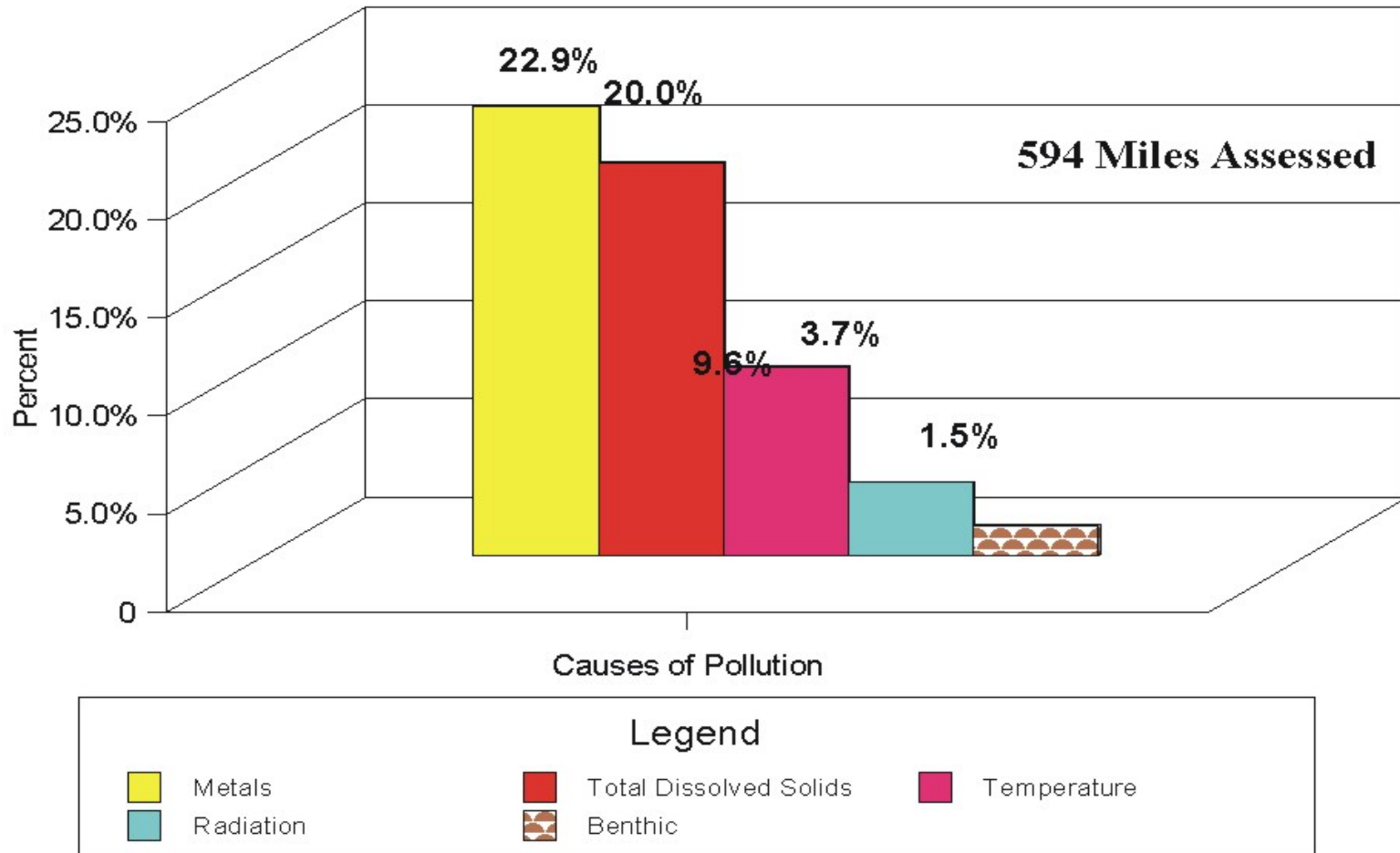


Figure 2.12-4 Percent impact by causes on stream water quality – Colorado River Southeast Watershed Management Unit

# Causes of Stream Water Quality Impairments

2008 Integrated Report Assessment - Colorado River Southeast Watershed Unit

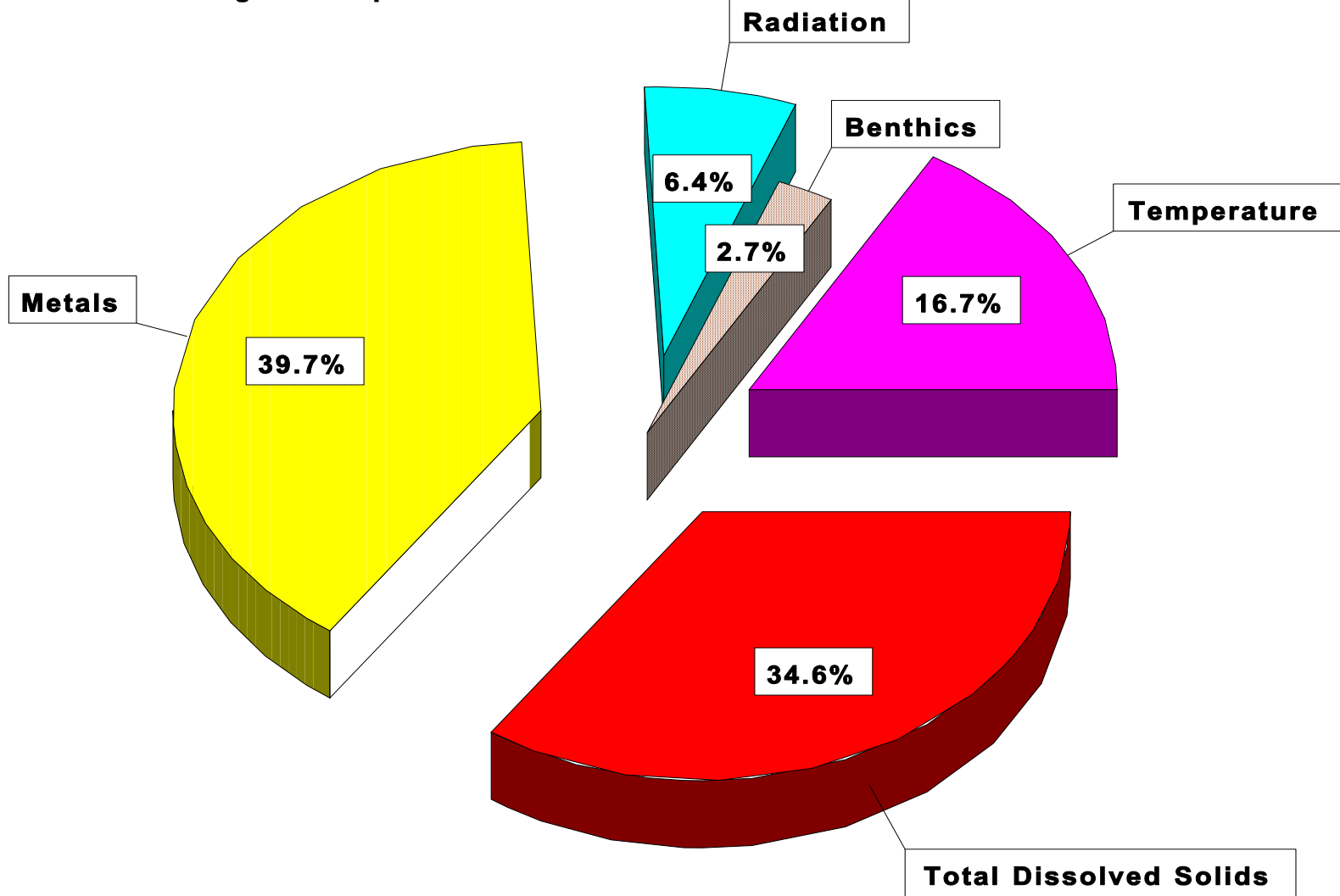


Figure 2.12-5 Relative percent contribution of causes on stream water quality – Colorado River Southeast Watershed Management Unit



# Percent of Stream Miles Affected By Sources

2008 Integrated Report Assessment - Colorado River West Watershed Unit

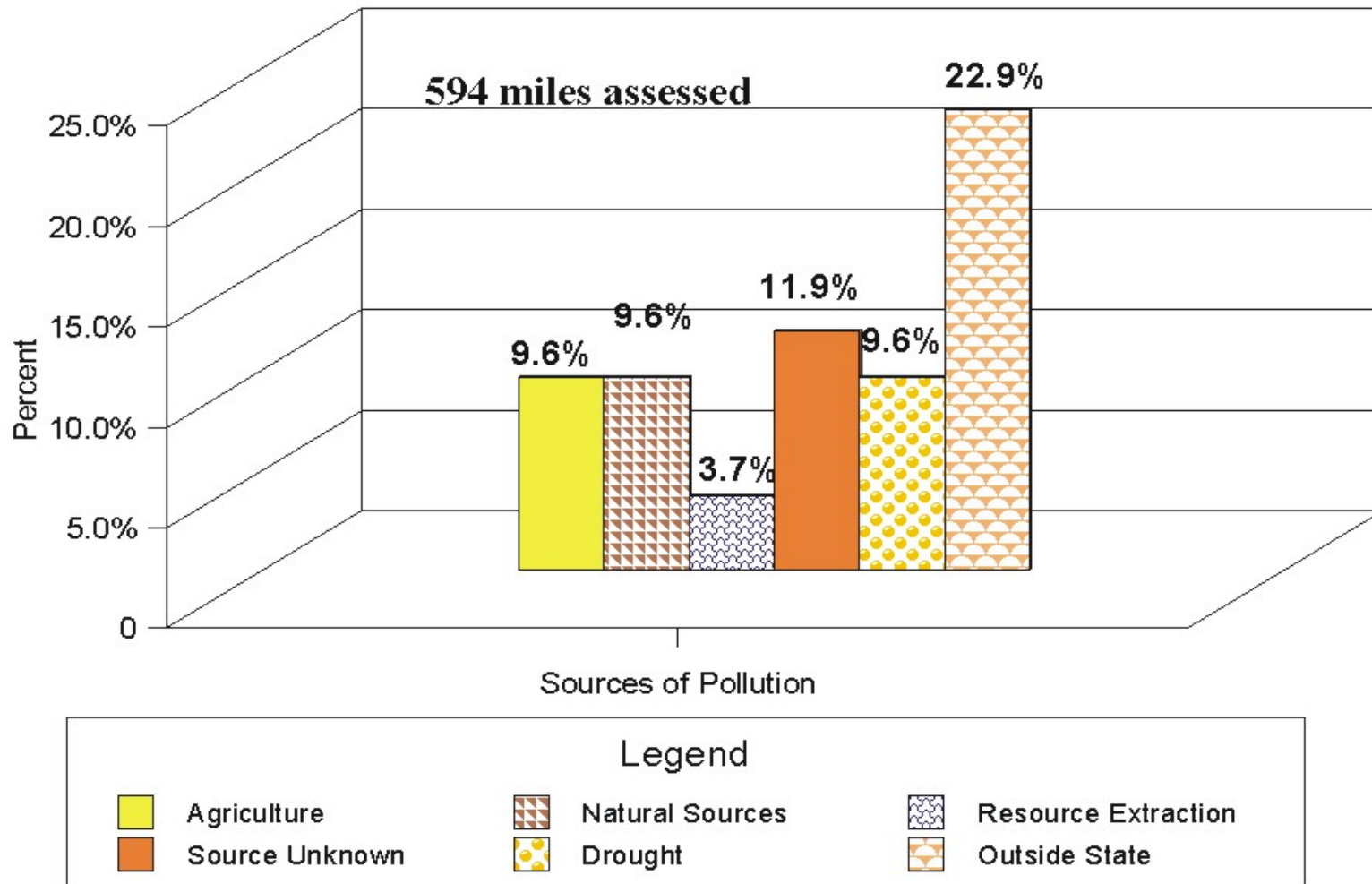


Figure 2.12-6 Percent impact by sources on stream water quality – Colorado River Southeast Watershed Management Unit

# Sources of Stream Water Quality Impairment

2008 Integrated Report Assessment - Colorado River Southeast Watershed Unit

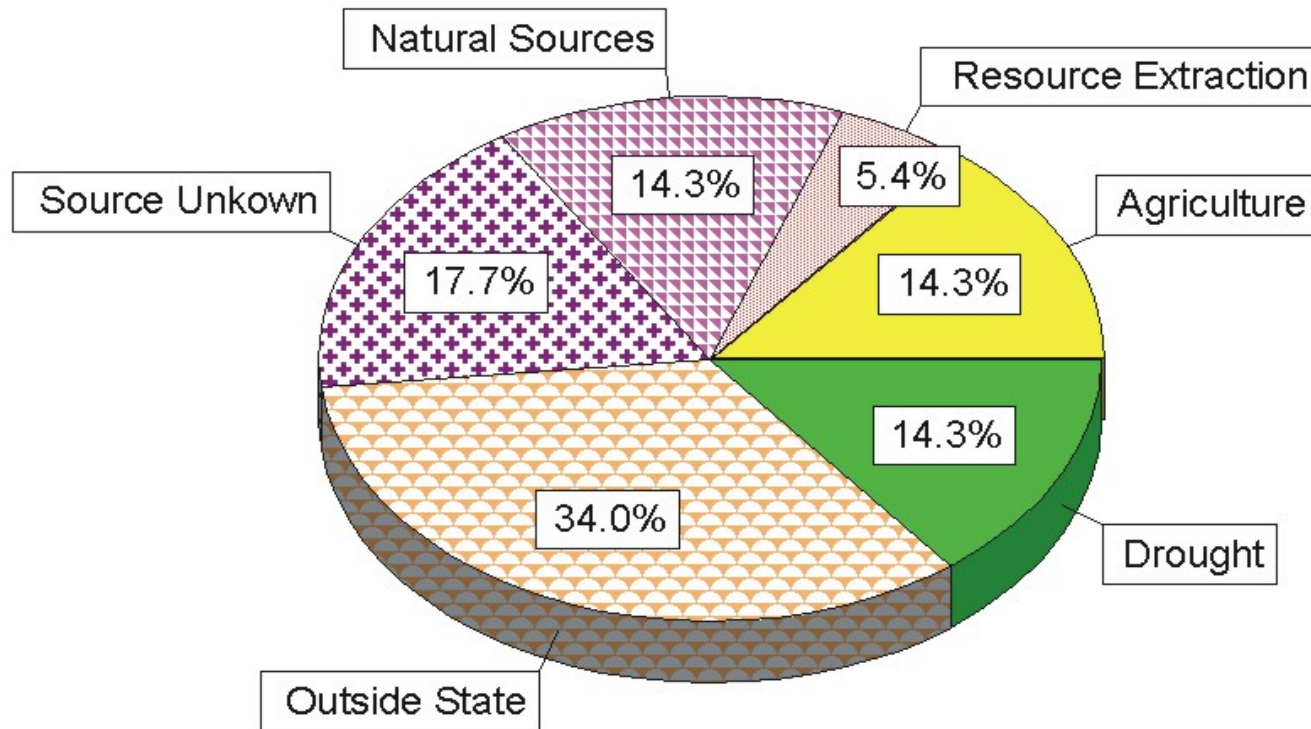


Figure 2.12-7 Relative percent contribution of sources on stream water quality – Colorado River Southeast Watershed Management Unit

**Table 2.12-6 Impaired Waters Located in the Colorado River Southeast Watershed Management Unit**

Watershed	Assessment	Assessment	Assessment	Beneficial Use	Beneficial		Pollutant	
Management	Unit	Unit	Unit	Class	Use	Support	Or	Stream
Unit	ID	Name	Description	Impaired	Support	Category	Pollution	Miles
Colorado River Southeast	UT14010005-001	Colorado River-6	Colorado River from HUC 14010005-14030001 boundary to Colorado State Line	3B	NS	5	Selenium	3.84
Colorado River Southeast	UT14030001-005	Colorado River-5	Colorado River from Dolores River confluence to HUC 14010005 boundary	3B	NS	5	Selenium	33.9
Colorado River Southeast	UT14030004-001	Dolores River	Dolores River and tributaries (except Granite Creek) from confluence with Colorado River to headwaters or Utah-Colorado state line	4	NS	5	TDS	61.73
Colorado River Southeast	UT14030005-003	Colorado River-3	Colorado River from Green River confluence to Moab	3B	NS	5	Selenium	62.69
Colorado River Southeast	UT14030005-004	Colorado River-4	Colorado River from Moab to HUC unit (14030005) boundary	3B	NS	5	Selenium	35.77
Colorado River Southeast	UT14030005-009	Castle Creek-1	Castle Creek and tributaries from confluence with Colorado River to Seventh-Day Adventist diversion	3B	NS	5	Benthic macroinvertebrate assessment impairment	9.1
Colorado River Southeast	UT14030005-011	Pack Creek	Pack Creek and tributaries from the confluence with Mill Creek to USFS boundary	3A	NS	5	Temperature	15.21
Colorado River Southeast	UT14030005-005	Mill Creek-1	Mill Creek and tributaries, except Pack Creek, from the confluence with Colorado River to USFS boundary	4	NS	5	Total Dissolved Solids	31.77
Colorado River Southeast	UT14030005-013	Onion Creek Upper	Onion Creek and tributaries from road crossing above Stinking Springs to headwaters	4	NS	5	TDS	2.2