

Chapter 2.11 Colorado River West Watershed Management Unit Water Quality Assessment

2.11.1 Introduction

The West Colorado Watershed Management Unit includes all streams located in the U.S.G.S. Hydrological Units (HUCs) listed in Table 2.11-1. Some of the major streams are the Price River, Huntington Creek, Cottonwood Creek, Ferron Creek, San Rafael River, Escalante River, Muddy Creek, Dirty Devil River, the Fremont River, and portions of the Green River.

Table 2.11-1 U.S.G.S. Hydrological Units in the Colorado River West Watershed Management Unit

Hydrological Unit Code	Hydrological Unit Name
14060007	Price
14060008	Lower Green
14060009	San Rafael
14070001	Upper Lake Powell
14070002	Muddy
14070003	Fremont
14070004	Dirty Devil
14070005	Escalante
14070006	Lower Lake Powell

2.11.2 Water Quality Assessment Results

Water quality and field data collected between January 1, 2002 and December 31, 2006 were assessed for beneficial use support. Assessments made for the 2006 intensive survey were reassessed to determine if the assessment was changed. Field and water chemistry data were compared against the water quality standards for the designated beneficial use classifications assigned to the rivers and streams to determine beneficial use support (Figure 2.11-1). Benthic macroinvertebrate data were used to assess some streams under DWQ's narrative standard (Chapter 2.15).

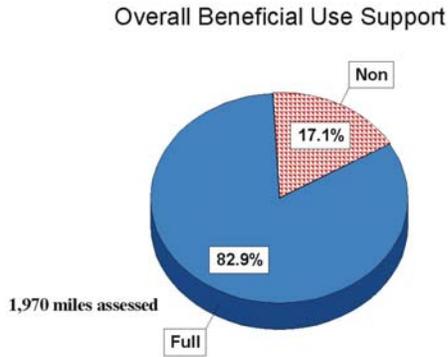


Figure 2.11-1 Overall Beneficial Use Support

2.11.2.1 Overall Beneficial Use Support

There are an estimated 2,551 perennial stream miles within the West Colorado River Watershed Management Unit. An assessment of at least one beneficial use was made on 1,970.1 miles of streams. Of these 1,633.0 (82.9%) miles were assessed as fully supporting at least one beneficial use and 337.1 miles (17.1%) were assessed as not supporting at least one designated beneficial use (Figure 2.11-2).

2.11.2.2 Beneficial Use Assessment By Categories

Table 2.11-2 lists the streams miles that were assigned to each of the assessment categories. An AU can be placed in multiple categories when it is assessed. Therefore the number of stream miles listed in the table may exceed the number assessed.

Table 2.11-2 Stream Miles by Assessment Category – Colorado River West Watershed Management Unit

Category	Category Definitions	Stream Miles
1	All beneficial uses fully supported.	
2	Beneficial uses assessed are fully supported.	1680.4
3A	No data or insufficient data to make an assessment.	424.8
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	88.2
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.	201.5

Colorado River West Management Unit

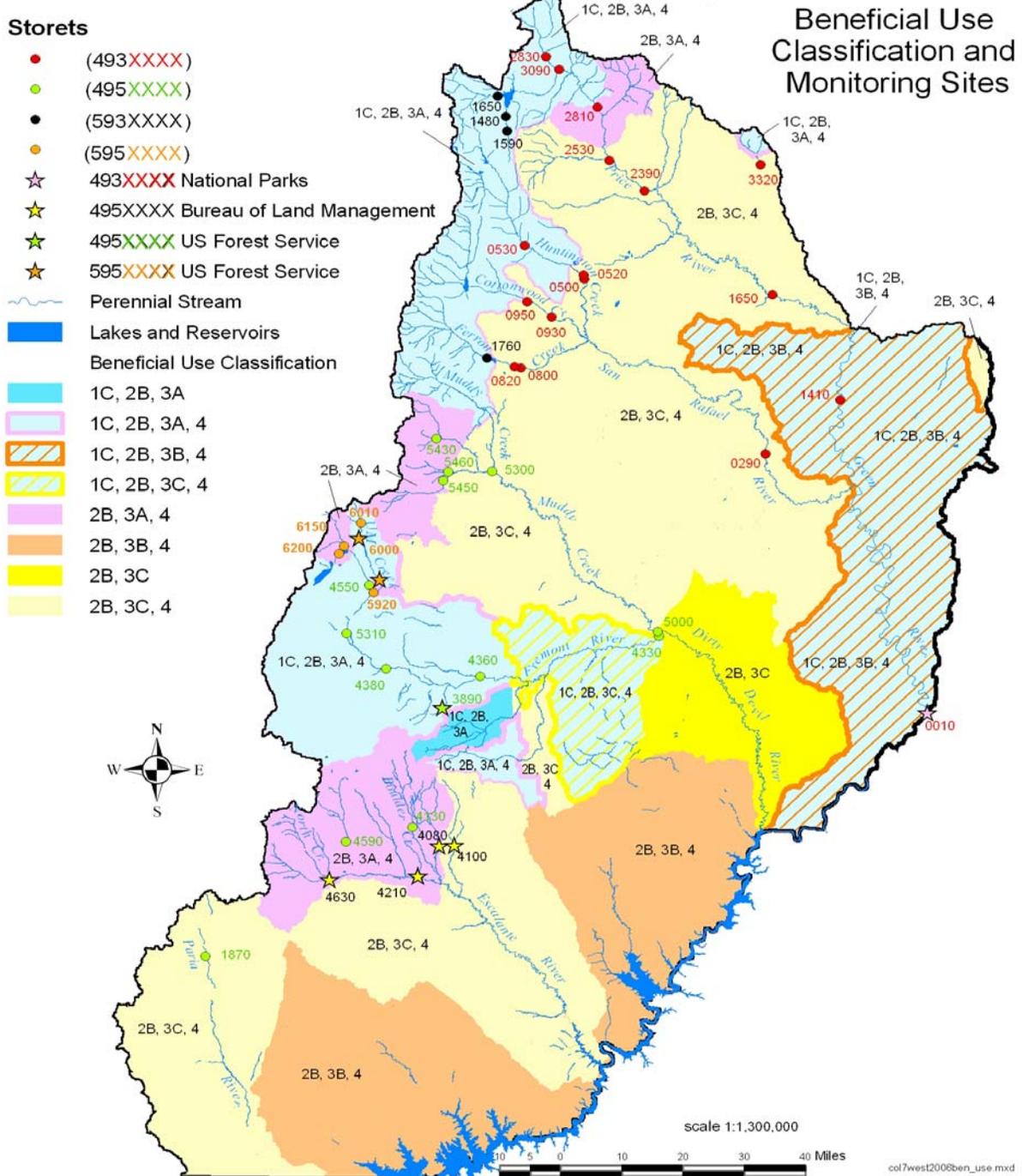


Figure 2.11-2 Beneficial use classifications – Colorado River West Watershed Management Unit

Colorado River West Management Unit

Assessment Categories 2008

Storets

- 493XXXX
- 495XXXX
- 593XXXX
- 595XXXX
- 599XXXX
- ★ 495XXXX Bureau of Land Management
- ★ 493XXXX National Parks
- ★ 495XXXX US Forest Service
- ★ 595XXXX US Forest Service
- 🌊 Lakes and Reservoirs

2008 Assessment Categories

- 🌊 2: Assessed Classes Fully Supporting
- 🌫️ 3A: Not Assessed (need more data)
- 🟡 4A: All TMDLs Approved
- 🔴 5: TMDL Required

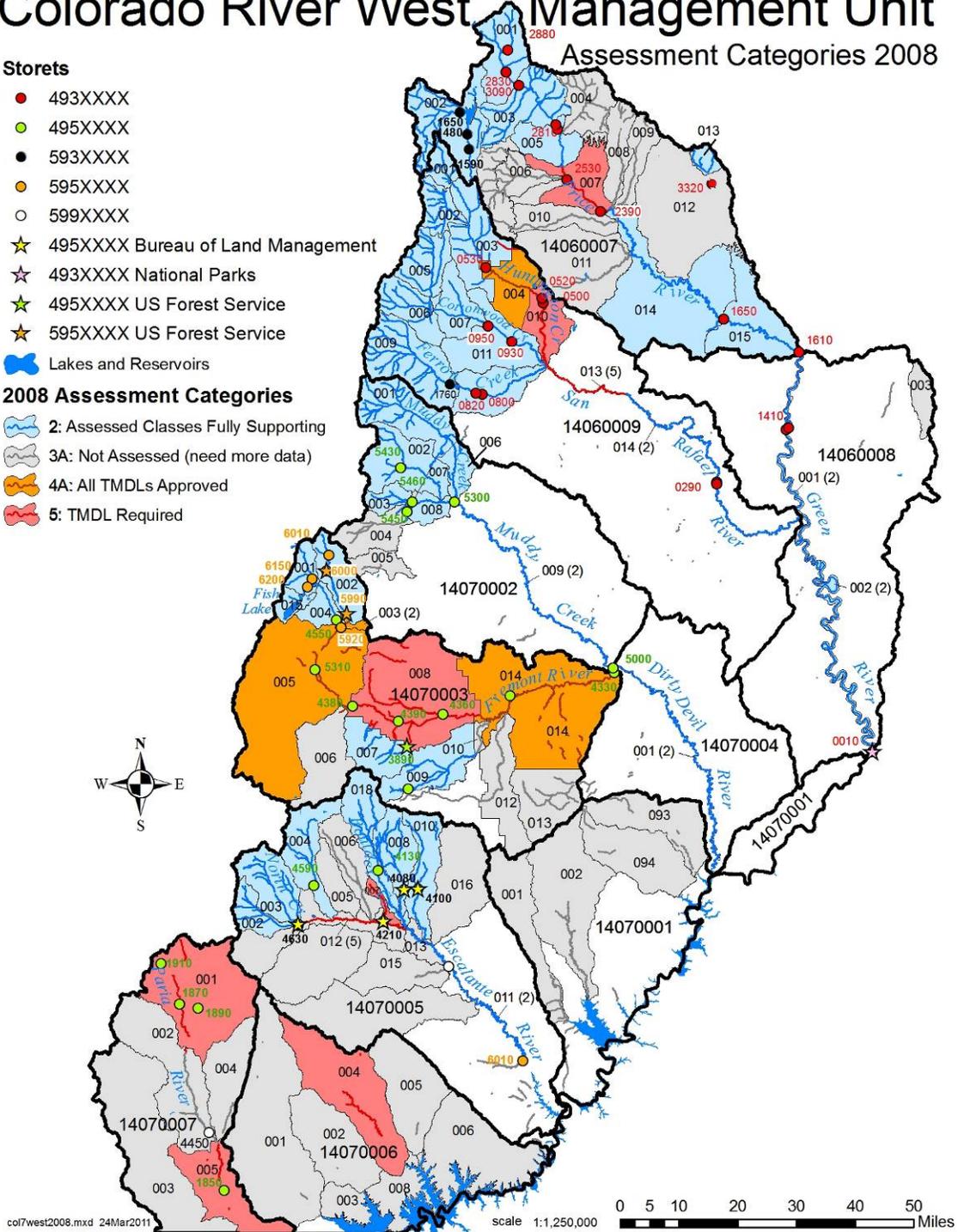


Figure 2.11-3 Beneficial use assessment by category – Colorado River West Watershed Management Unit

Table 2.11-4 Total Waters Impaired by Various Cause Categories (Stream Miles) - Colorado River West Watershed Management Unit

Cause Category	Stream Miles
Benthic macroinvertebrate assessment impairment	132.13
E. coli	
Flow Alteration	
Netals	25.79
Organic Enrichment/Low DO	29.34
Other Habitat Alterations	
pH	
Radiation	
Salinity/TDS/Chlorides	84.89
Siltation	
Temperature	16.77
Total Phosphorus	29.34
Unionized Ammonia	

Table 2.11-5 Total Waters Impaired by Various Source Categories (Stream Miles) – Colorado River West Watershed Management Unit

Source Category	Stream Miles
Agriculture	140.02
Aquaculture	
Construction	
Drought	16.77
Habitat Modification (other than Hydromodification)	
Hydromodification	
Industrial Point Sources	
Municipal Point Sources	
Natural Sources	110.68
Resource Extraction	
Septic	
Source Unknown	161.47
Sources outside State Jurisdiction or Borders	
Urban Runoff/Storm Sewers	

Percent of Stream Miles Affected By Causes

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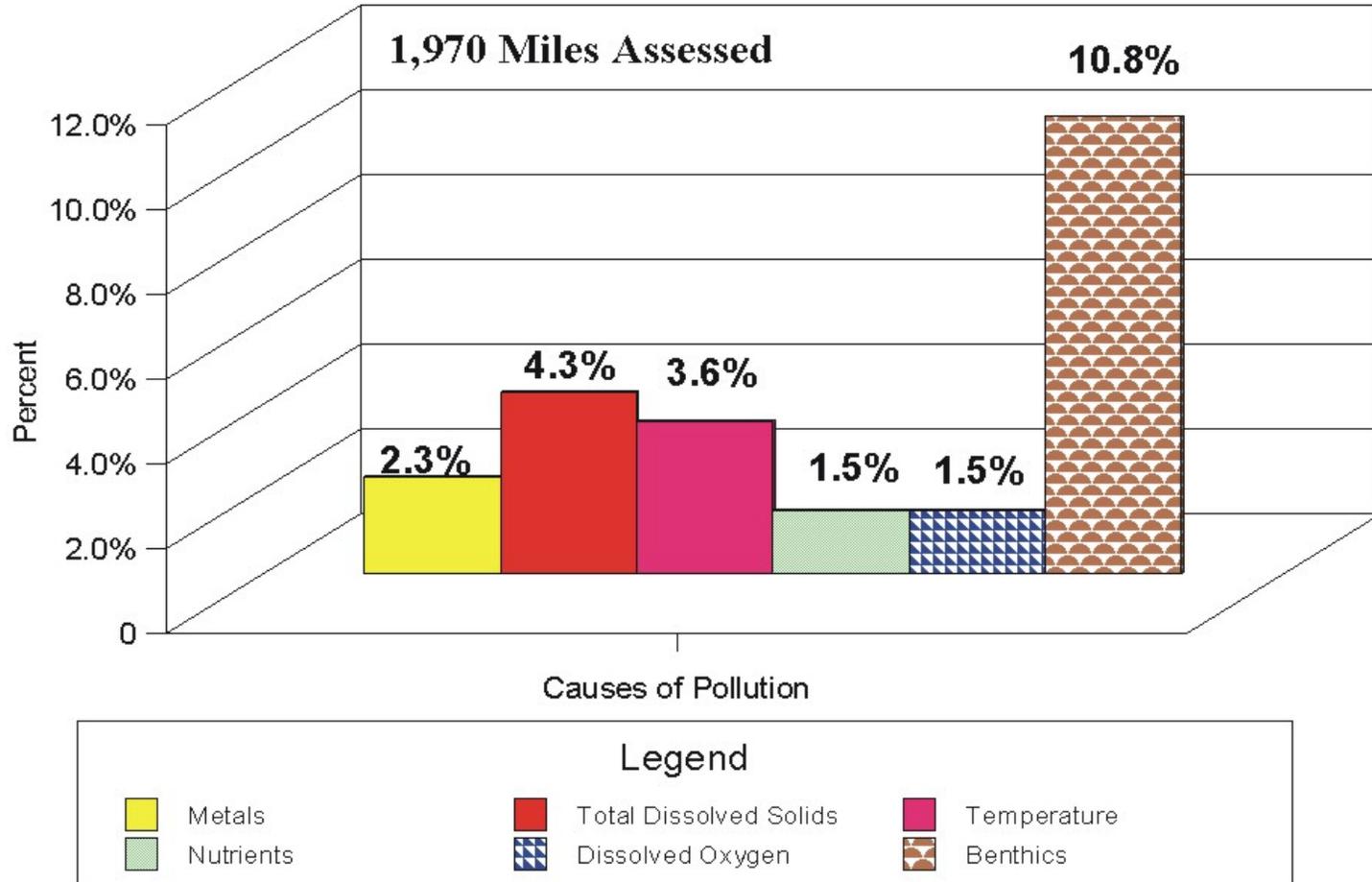


Figure 2.11-4 Percent impact by causes on stream water quality – Colorado River West Watershed Management Unit

Causes of Stream Water Quality Impairments

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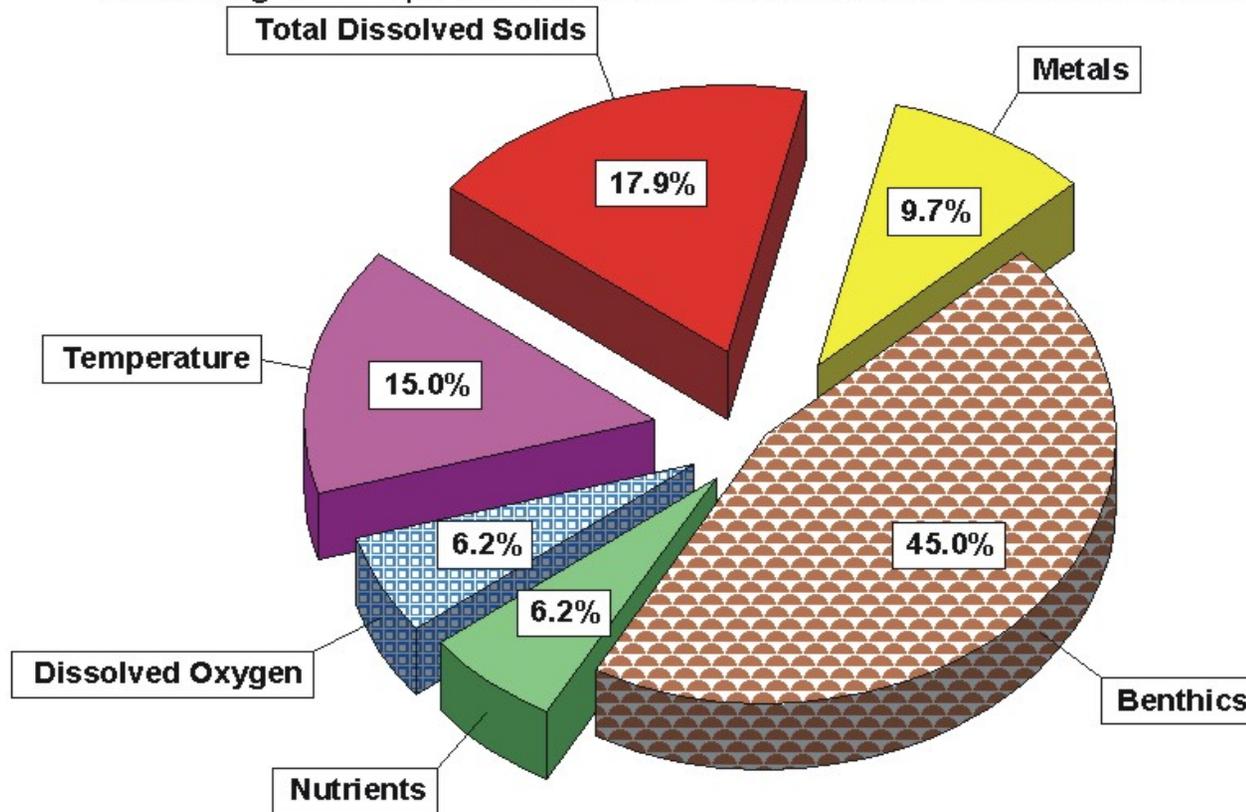


Figure 2.11-5 Relative percent contribution of causes on stream water quality – Colorado River West Watershed Management Unit

Percent of Stream Miles Affected By Sources

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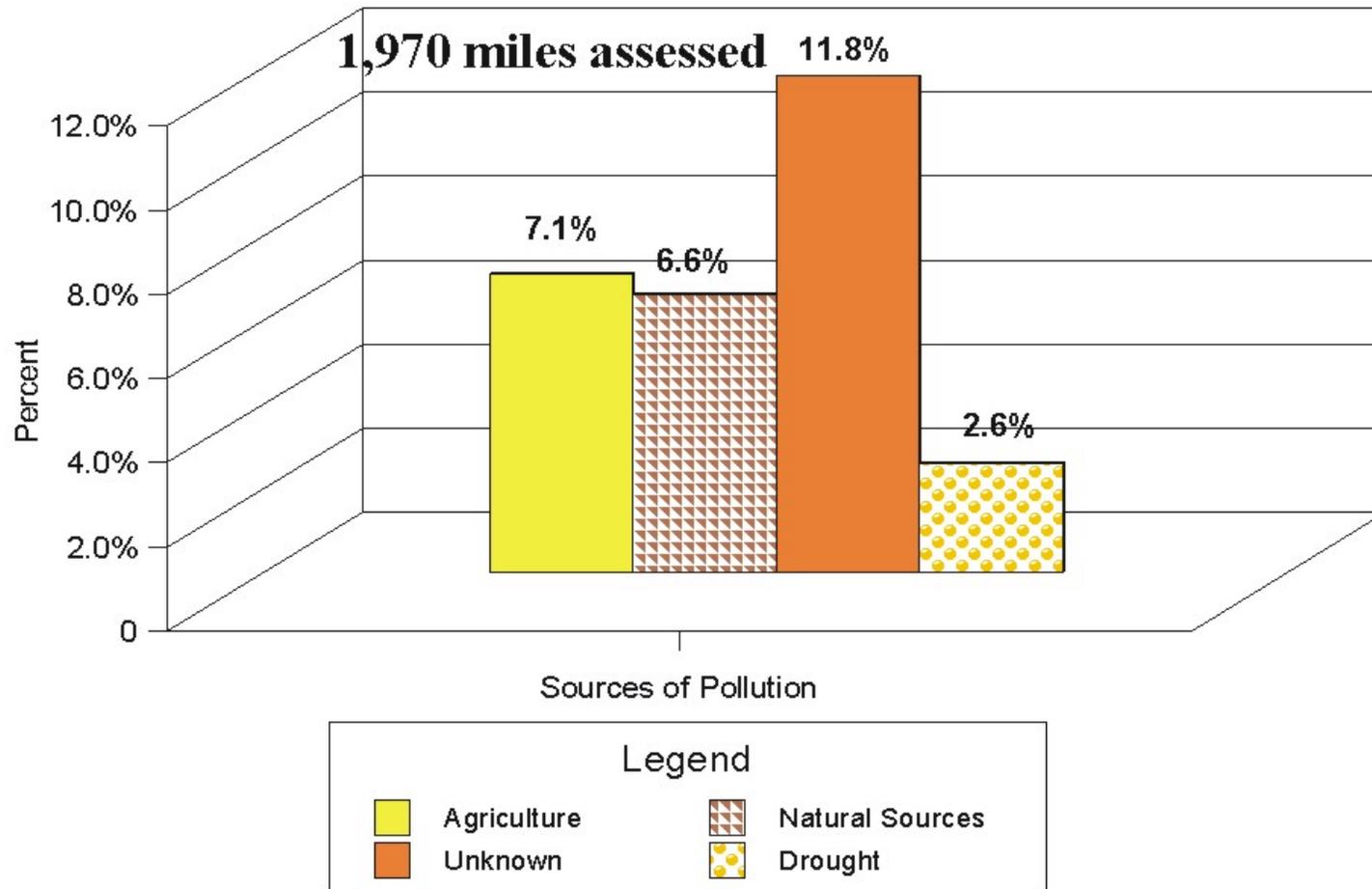


Figure 2.11-6 Percent impact by sources on stream water quality – Colorado River West Watershed Management Unit

Sources of Stream Water Quality Impairment

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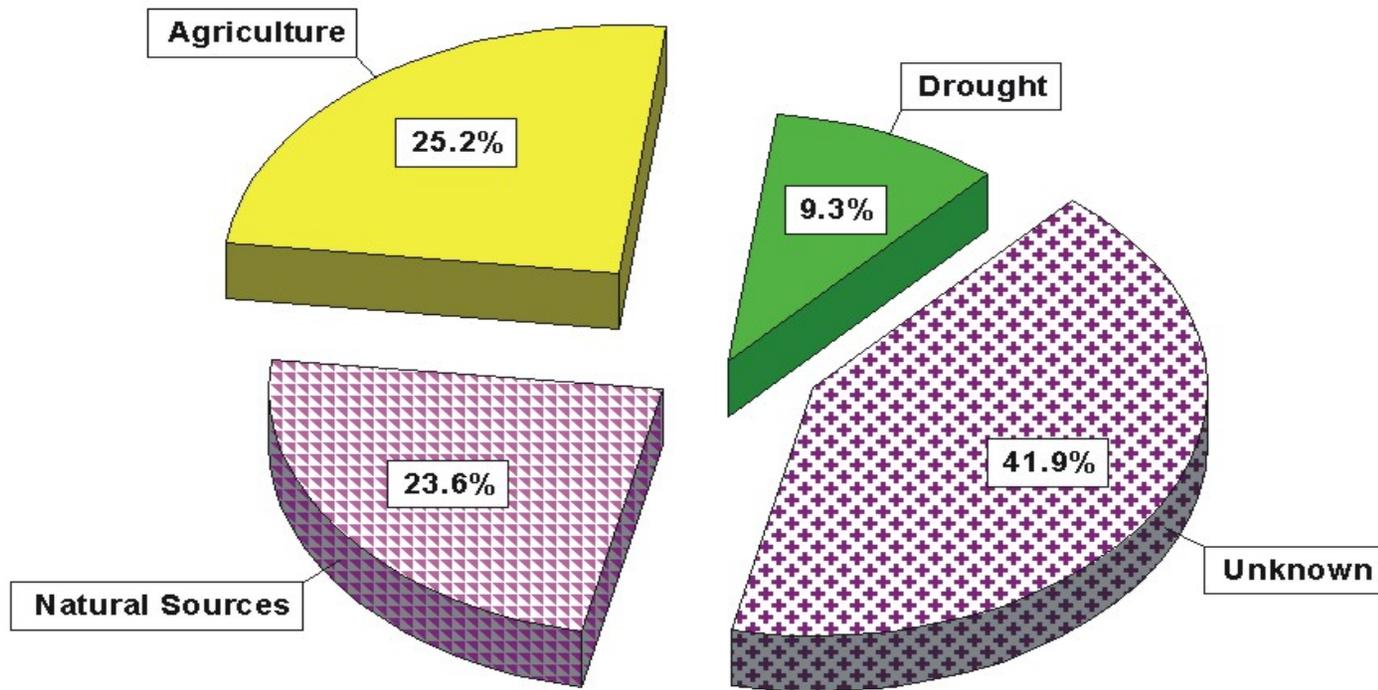


Figure 2.11-7 Relative percent contribution of sources on stream water quality – Colorado River West Watershed Management Unit

Table 2.11-6 Impaired Waters Located in the Colorado River West Watershed Management Unit

Watershed	Assessment	Assessment	Assessment	Beneficia l Use	Beneficial		Pollutant	
Management	Unit	Unit	Unit	Class	Use	Support	Or	Stream
Unit	ID	Name	Description	Impaired	Support	Category	Pollution	Miles
Colorado River West	UT14060009-010	Huntington Creek-1	Huntington Creek and tributaries from confluence with Cottonwood Creek to Highway 10	3C	NS	5	Selenium	25.79
Colorado River West	UT14060009-013	Upper San Rafael	San Rafael River from Buckhorn Crossing to confluence of Huntington and Cottonwood Creeks	3C	NS	5	Benthic macroinvertebrate assessment impairment	23.3
Colorado River West	UT14070003-008	Fremont River-3	Fremont River and tributaries from east boundary of Capitol Reef National Park to Bicknell	3A	NS	5	Benthic macroinvertebrate assessment impairment	82.88
Colorado River West	UT14070005-007	Calf Creek	Calf Creek and tributaries from confluence with Escalante River to headwaters	3A	NS	5	Temperature	8.13
Colorado River West	UT14070005-012	Upper Escalante	Escalante River from Boulder Creek confluence to Birch Creek confluence	3B	NS	5	Benthic macroinvertebrate assessment impairment	26.78
Colorado River West	UT14070006-004	Chance Creek	Chance Creek and tributaries from Lake Powell to headwaters	3A	NS	5	Benthic macroinvertebrate assessment impairment	16.72
Colorado River West	UT14070007-001	Paria River-1	Paria River from start of Paria River Gorge to headwaters	3C	NS	5	Temperature	16.77
Colorado River West	UT14070007-001	Paria River-1	Paria River from start of Paria River Gorge to headwaters	3C	NS	5	Benthic macroinvertebrate assessment impairment	16.77
Colorado River West	UT14070007-001	Paria River-1	Paria River from start of Paria River Gorge to headwaters	4	NS	5	TDS	16.77
Colorado River West	UT14070007-005	Paria River-3	Paria River and tributaries from Arizona-Utah state line to Cottonwood Creek confluence	3C	NS	5	Benthic macroinvertebrate assessment impairment	9.23
Colorado River West	UT14070007-005	Paria River-3	Paria River and tributaries from Arizona-Utah state line to Cottonwood Creek confluence	4	NS	5	TDS	9.23