

Chapter 2.9.1 Cedar/Beaver Watershed Management Unit Assessment

2.9.1. Introduction

The Cedar / Beaver Watershed Management Unit includes all streams located in the U.S.G.S Hydrological Units (HUCs) listed in Table 2.9.1. There are not many streams within this unit with the major streams being the Beaver River, Coal Creek, Shoal Creek and Pinto Creek.

Table 2.9.1. U.S.G.S. Hydrological Units in the Cedar/Beaver Watershed Management Unit.	
Hydrological Unit Code	Hydrological Unit Name
16030006	Escalante Desert
16030007	Beaver Bottoms-Upper Beaver
16030008	Lower Beaver

2.9.2. Water Quality Assessment Results

2.9.2.1. Overall Beneficial Use Support—Data collected between January 1, 2002 and December 31, 2006, including the intensive survey were used to determine beneficial use support. Benthic macroinvertebrate data were used for the first time in making beneficial use assessments (Chapter 2.15).

Beneficial use support assessments are made by comparing data against numeric standards established for each beneficial use.

Figure 2.9.2 is a map of the designated beneficial uses assigned to the stream and river Assessment Units. Assessments using benthic macroinvertebrate data are based upon the State's narrative standard.

An assessment of support for at least one beneficial use was made for 289.2 stream miles. Of those assessed, 231.6 miles (80.1%) are fully supporting , and all the beneficial uses

assessed and (19.9%) are not supporting at least one designated beneficial use. The overall beneficial use assessment is shown in Figure 2.9.1.

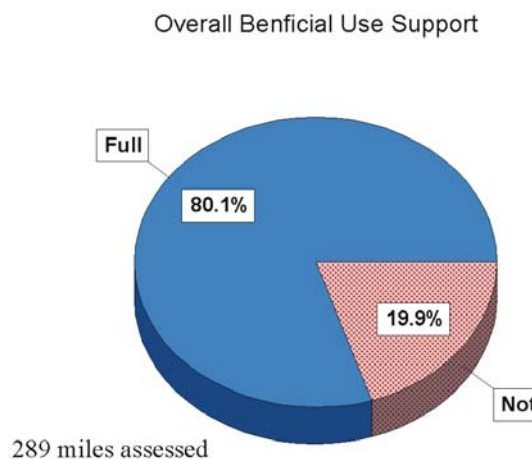


Figure 2.9.1. Overall beneficial use support.

2.9.2.2. Beneficial Use Assessment By Categories-- The number of stream miles assessed by categories is listed in Table 2.9.2. Figure 2.9.3 is a map of the assessment categories that rivers and streams were assigned to after the beneficial uses were evaluated. An Assessment Unit (AU) can be in more than one category.







Category	Category Definition	Stream Miles
1	All beneficial uses fully supported.	0
2	Beneficial uses assessed are fully supported.	231.61
3A	No data or insufficient data to make an assessment.	51.2
3B	Lakes that are not supported for one cycle only.	0.0
3C	Insufficient data to assess but an assessment plan is in place.	0.0
4A	Approved TMDL	57.7
4B	Pollution control requirements are expected to result in full beneficial use support in near future.	0
4C	Impaired by pollution, no TMDL required.	57.7
5	Impaired by pollutant, TMDL required.	0.0

2.9.2.3. Individual Beneficial Use Support-- Individual beneficial use support is listed in Table 2.9.3. For aquatic life use support, 289.2 miles (80.1%) are fully supporting and 57.6 miles (19.9%) are not supporting this beneficial use. Of the 275.7 stream miles assessed for agricultural use, 218.1 (79.1%) were assessed as fully supporting and 57.6 miles as (20.9%) not supporting this designated beneficial use. The 57.6 miles assessed for swimming and secondary contact are not supporting this beneficial use because of pH.

	Size	Size Fully	Size Not	
	Assessed	Supporting	Supporting	Totals
Use				
Aquatic Life	289.2	231.6	57.6	317.3
Fish Consumption	0.0	0.0	0.0	0.0
Swimming	57.6	0.0	57.6	57.6
Secondary Contact	57.6	0.0	57.6	57.6
Drinking Water	0.0	0.0	0.0	0.0
Agricultural	275.7	218.1	57.6	275.7
Use				
Aquatic Life		80.1%	19.9%	100.0%
Fish Consumption		0.0%	0.0%	0.0%
Swimming		0.0%	100.0%	100.0%
Secondary Contact		0.0%	100.0%	100.0%
Drinking Water		0.0%	0.0%	0.0%
Agricultural		80.1%	19.9%	100.0%

Cedar / Beaver Unit

Beneficial Use Classes

-  8 Digit HUC Boundary
-  Perennial Streams
-  Lakes and Reservoirs
- Beneficial Use Classification**
-  2B, 3A, 4
-  2B, 3C, 4
-  undefined (white)

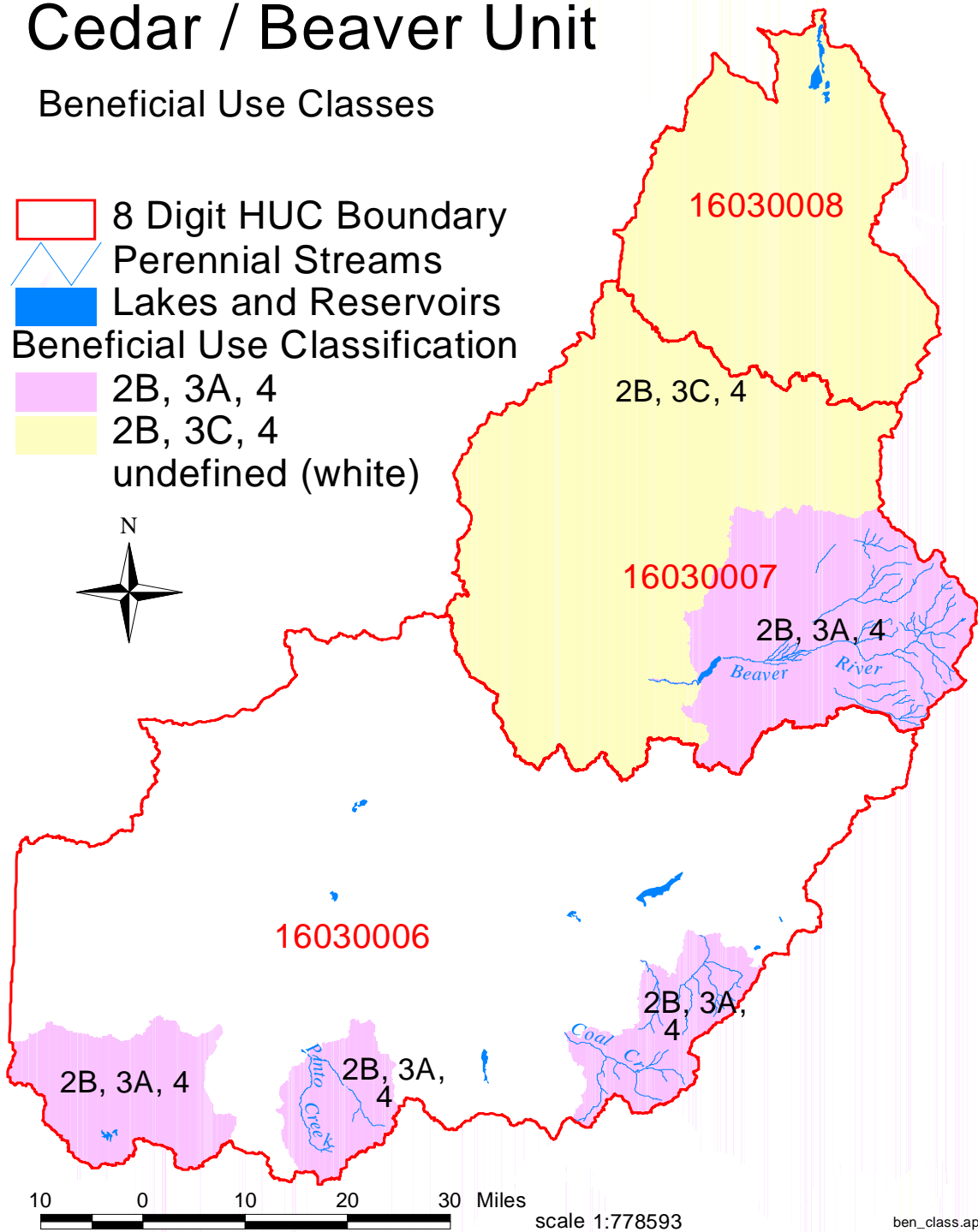


Figure 2.9.2. River and stream designated beneficial use classes – Cedar/Beaver Watershed Management Unit.

Cedar / Beaver Management Unit

Assessment Categories 2008

STORET Sites

● 494(XXXX)

★ 495(XXXX)

■ Lakes and Reservoirs

□ 8-digit HUC Boundary

2008 Assessment

■ 2: Assessed Classes Supporting

■ 3A: Not Assessed (Need More Data)

■ 4A, 4C: TMDLs Approved, Some Not Required

*4C: A pollution parameter listed as category 4C does not require a TMDL analysis.

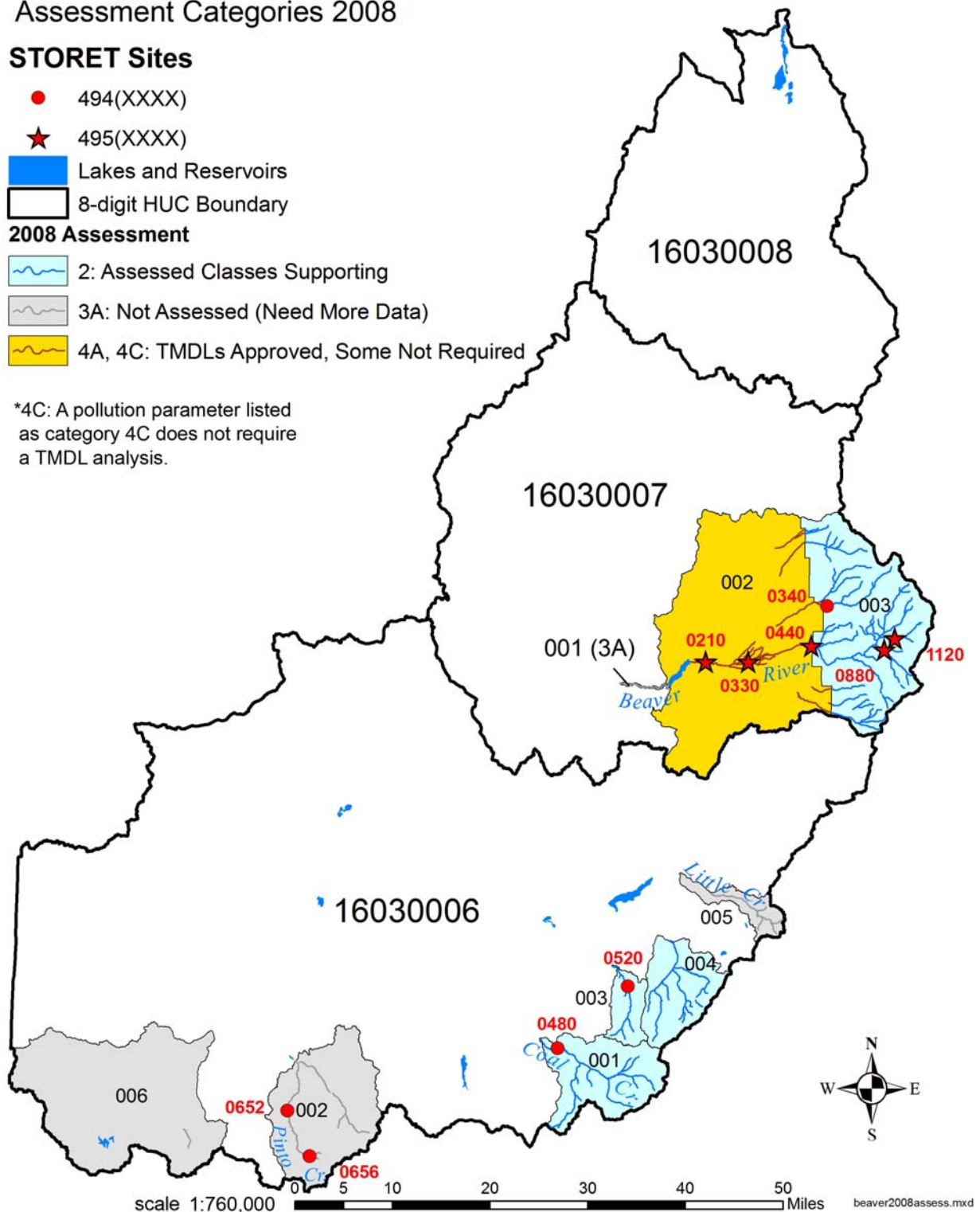


Figure 2.9.3. Beneficial use assessment by category – Cedar / Beaver Watershed Management Unit.

2.9.2.4. Total Waters Impaired by Various Causes— The causes of impairment are listed in Table 2.9.4. The causes of impairment are nutrients (total phosphorus), thermal modification, pH and habitat alterations. The percent of miles impacted by various causes is illustrated in Figure 2.9.4. The relative impact of these causes is shown in Figure 2.9.5.

2.9.2.5. Total Waters Impaired by Various Sources—The number of stream miles impacted by sources are listed in table 2.9.5. The sources of impairment are agricultural activities, hydromodification, habitat modification, and unknown sources as shown in Figure 2.9.6. The relative percent impairment by sources is illustrated in Figure 2.9.7.

The impaired Assessment Units are listed in Table 2.9.6. The table includes the class of beneficial uses impaired and the pollutant or pollution causing the impairment.

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Table 2.9.4. Total Waters Impaired by Various Cause Categories – Cedar/Beaver Watershed Management Unit.	
Cause Category	Stream Miles
Cause unknown	0.0
Unknown toxicity	0.0
Pesticides	0.0
Priority organics	0.0
Nonpriority organics	0.0
Metals	0.0
Ammonia	0.0
Chlorine	0.0
Other inorganics	0.0
Nutrients	57.7
pH	57.7
Siltation/Sediments	0.0
Organic enrichment/low DO	0.0
Salinity/TDS/Chlorides	0.0
Thermal modifications	57.7
Flow alterations	0.0
Other habitat alterations	57.7
Pathogen Indicators	0.0
Radiation	0.0
Oil and grease	0.0
Taste and odor	0.0
Noxious aquatic plants	0.0
Total Toxics	0.0
Turbidity	0.0
Benthic Macroinvertebrates	0.0
Other (Specify)	0.0

Table 2.9.5. Total Waters Impaired by Various Source Categories – Cedar/Beaver Watershed Management Unit.	
Source Category	Stream Miles
Industrial Point Sources	0.0
Municipal Point Sources	0.0
Combined Sewer Overflow	0.0
Agriculture	57.7
Silviculture	0.0
Construction	0.0
Urban Runoff/Storm Sewers	0.0
Resource Extraction	0.0
Land Disposal	0.0
Hydromodification	57.7
Habitat Modification	57.7
Marinas	0.0
Atmospheric Deposition	0.0
Contaminated Sediments	0.0
Unknown Source	0.0
Natural Sources	57.7
Reservoir Releases	0.0
Recreation	0.0
Aquaculture	0.0
Extreme Drought	0.0

Percent of Stream Miles Affected By Causes

2008 Integrated Report Assessment - Cedar / Beaver Management Unit

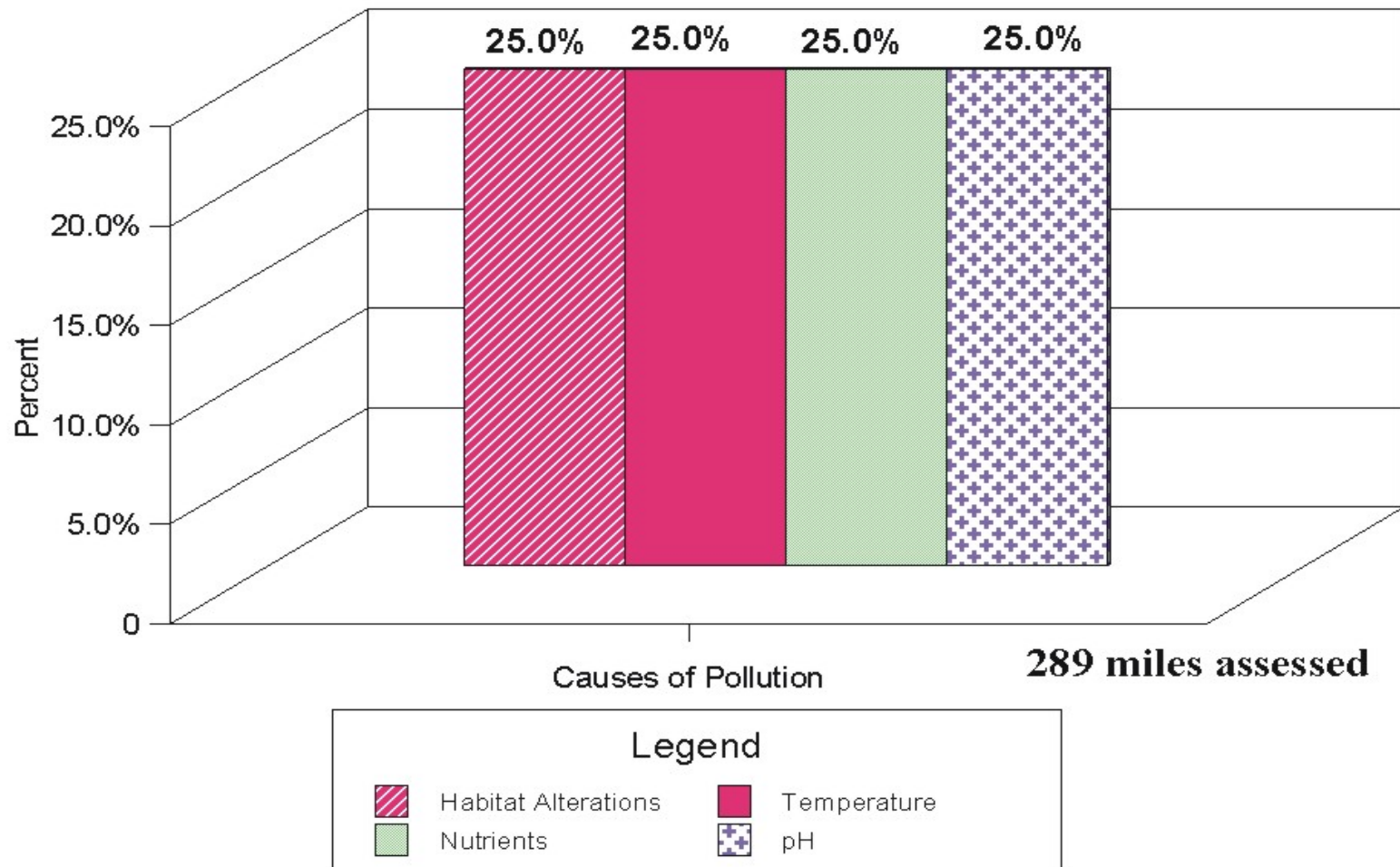


Figure 2.9.4. Percent of assessed stream miles impacted by various causes – Cedar/Beaver Watershed Management Unit.

Causes of Stream Water Quality Impairments

2008 Integrated Report Assessment - Cedar / Beaver Mangement Unit

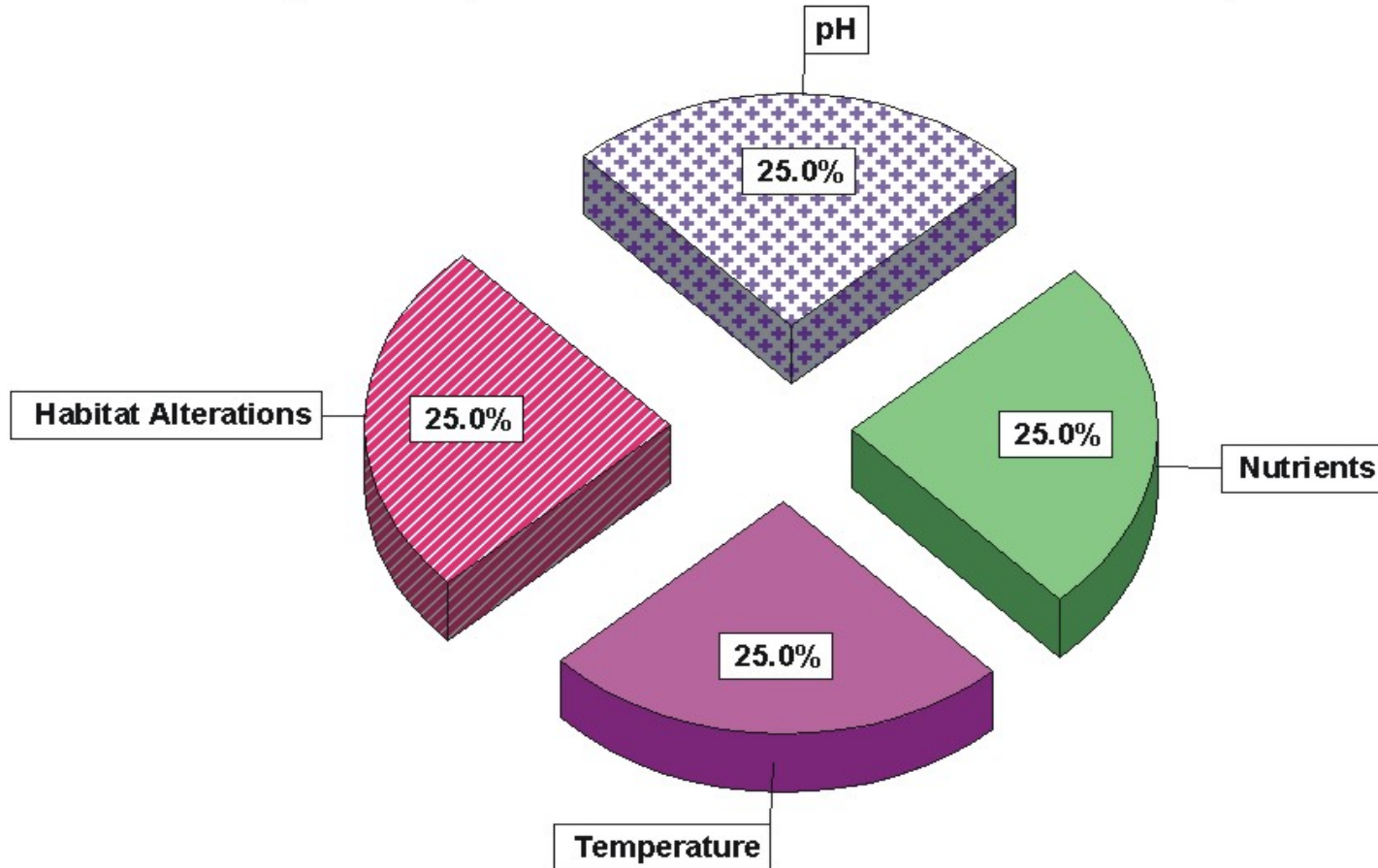


Figure 2.9.5. Relative percent impact by causes on water quality – Cedar/Beaver Watershed Management Unit.

Percent of Stream Miles Affected By Sources

2008 Integrated Report Assessment - Cedar / Beaver Watershed Management Unit

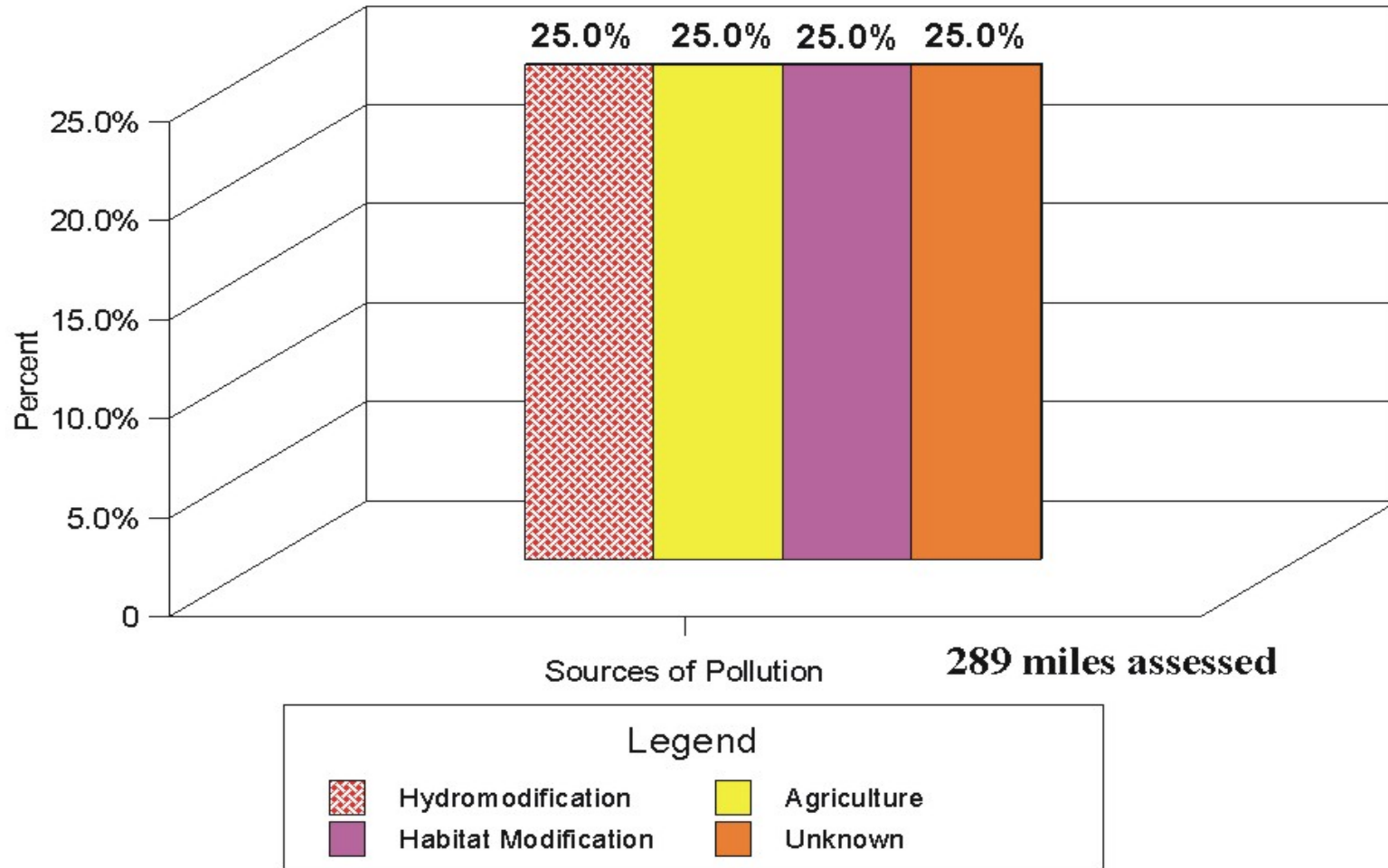


Figure 2.9.6. Percent of assessed stream miles impacted by various sources – Cedar/Beaver Watershed Management Unit.

Sources of Stream Water Quality Impairment

2008 Integrated Report Assessment - Cedar / Beaver Watershed Management Unit

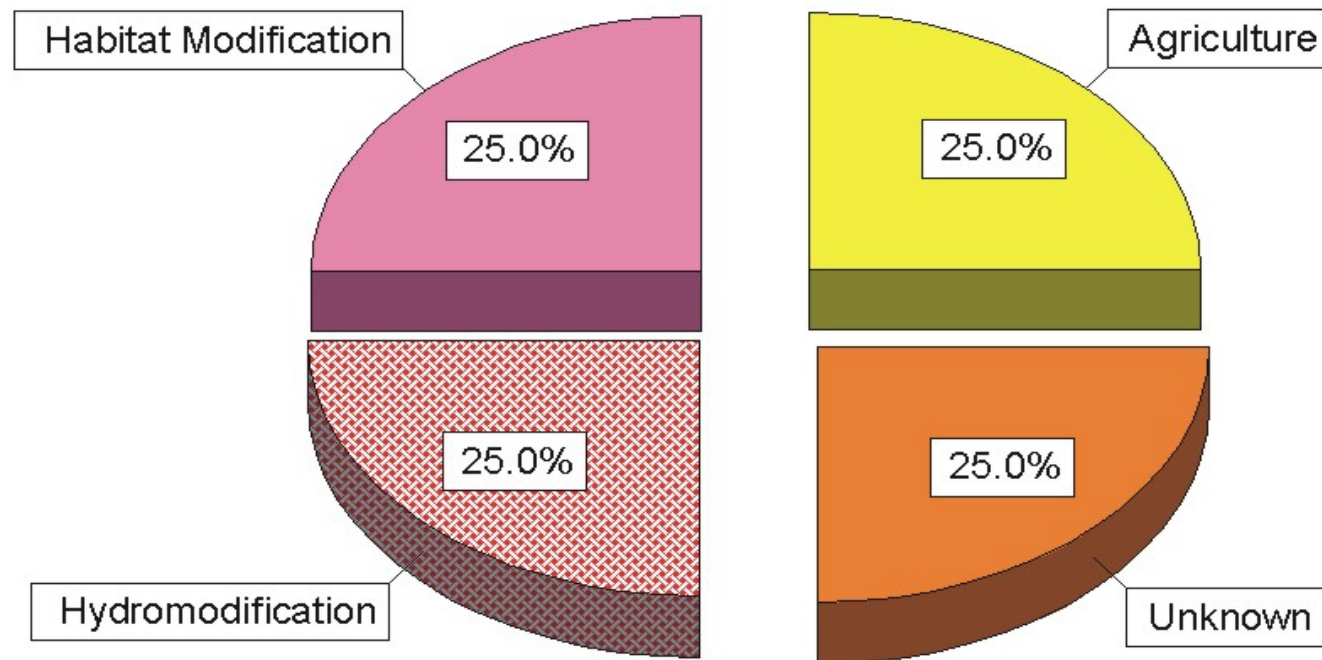


Figure 2.9.7. Relative percent contribution of causes on stream water quality – Cedar/Beaver Watershed Management Unit.

Table 2.9.6. Impaired Waters Located in the Cedar/Beaver Watershed Management Unit.							
Assessment	Assessment	Assessment	Beneficial Use	Support	Beneficial Use	Pollutant	Stream Miles
Unit	Unit	Unit	Class	Support	Assessment	Or	Stream Miles
ID	Name	Description	Impaired	Category	Category	Pollution	Stream Miles
UT16030007-002	Beaver River-2	Beaver River and tributaries from Minersville Reservoir to USFS boundary	2B, 3A, 4	NS	4A	pH	57.57
UT16030007-002	Beaver River-2	Beaver River and tributaries from Minersville Reservoir to USFS boundary	3A	NS	4A	Total Phosphorus	57.57
UT16030007-002	Beaver River-2	Beaver River and tributaries from Minersville Reservoir to USFS boundary	3A	NS	4A	Thermal Modifications	57.57
UT16030007-002	Beaver River-2	Beaver River and tributaries from Minersville Reservoir to USFS boundary	3A	NS	4C	Other Habitat Alterations	57.57