
10.1. INTRODUCTION

The Lower Colorado River Watershed Management Unit (WMU) includes all streams located in the USGS Hydrologic Units listed in Table 10.1. Some of the major streams in this WMU are the Santa Clara River, Virgin River, East Fork of the Virgin River, North Fork of the Virgin River, North Creek, Kanab Creek and Laverkin Creek.

Biological, water chemistry and field data collected from January 1, 2004 through December 31, 2008 were used to make assessments. Water quality data were compared against standards established for each of the designated beneficial uses. Figure 10-1 shows the beneficial use classifications for this watershed management unit.

10.2 IMPAIRED WATERS

The list of streams and lakes impaired and requiring a TMDL (Category 5; Section 303d) for the Lower Colorado are presented in Table 10-2. New listings for 2010 include North Fork Virgin River-1, North Fork Virgin River-2, and Virgin River-1. None of the streams or lakes previously listed on the Section 303d list of impaired waters are now meeting the standards or have an approved TMDL for this cycle. Assessment results for all AUs for streams are presented in Table 10-3 and for lakes in Table 10-4. Lake assessments are further discussed in the next section.

10.3 LAKE ASSESSMENTS

Water quality assessment for lakes includes determination of Carlson's trophic state index (TSI), water chemistry, phytoplankton species dominance, reported fish kills, and water quality trends.

Table 10-5 shows TSIs based on each sample collected from May through September by sample date. Table 4-6 contains a summary of lake trophic status by study periods. Note that some of the changes in TSIs between assessment periods is due to the variability in the lakes and reservoirs and some is due to switching methodologies between 2008 and 2010. The reported TSI for 2010 is based on Chl-a whereas prior reporting cycles averaged the TSI based on secchi disk depth (TSI-SD), Chl-a (TSI-Chla), and total phosphorus (TSI-TP). Table 10-6 includes the TSIs using both the 2008 and 2010 method using the 2010 data.

TSI values for some lakes and reservoirs differed between the 2008 and 2010 methods. Small differences are defined as a difference in TSIs of 6-10, medium differences 11-20, and large differences as greater than 20. A small difference was observed for Gunlock Reservoir and a medium difference for Kolob Reservoir. The lacks of large differences suggest little difference in trophic state between the new and older methods.

For the purpose of assessing trends, the TSI's from the most recent five assessment periods were considered. Consistent trends that resulted in a net TSI change of five or changes greater than 10 between 2008 and 2010, which are not attributable to the change in TSI methodology alone, are identified. Gunlock Reservoir appears to have an increasing trend in TSI.

HEALTH ADVISORIES

Gunlock and Sand Hollow Reservoirs have fish consumption advisories for mercury.

TABLES

Table 10-1 USGS Hydrological Units in the Lower Colorado Watershed Management Unit

USGS 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

Table 10-2 Impaired Streams and Lakes Requiring a TMDL – Lower Colorado Watershed

Impaired Streams and Lakes Requiring a TMDL - Lower Colorado Watershed				
AU ID	AU Name	Water Type	Size	Location Description
UT15010003-002_00	Kanab Creek-1	RIVER	17.637 MILES	Kanab Creek and tributaries from state line to the confluence with Fourmile Hollow near the White Cliffs
Cause	Cycle First Listed	TMDL Status	Use	Source
Total Dissolved Solids	2008	Low Priority	Agricultural	<ul style="list-style-type: none"> • Agriculture • Natural Sources

Impaired Streams and Lakes Requiring a TMDL - Lower Colorado Watershed

AU ID	AU Name	Water Type	Size	Location Description
UT15010003-004_00	Johnson Wash-1	RIVER	11.964 MILES	Johnson Wash and tributaries from Utah-Arizona state line to Skutumpah Canyon confluence
Cause	Cycle First Listed	TMDL Status	Use	Source
Total Dissolved Solids	2008	Low Priority	Agricultural	<ul style="list-style-type: none"> • Agriculture
AU ID	AU Name	Water Type	Size	Location Description
UT15010008-001_00	Santa Clara-1	RIVER	23.667 MILES	Santa Clara River from confluence with Virgin River to Gunlock Reservoir
Cause	Cycle First Listed	TMDL Status	Use	Source
Boron	2008	Low Priority	Agricultural	<ul style="list-style-type: none"> • Source Unknown
Temperature, water	2008	Low Priority	Warm Water Aquatic Life	
AU ID	AU Name	Water Type	Size	Location Description
UT15010008-002_00	Santa Clara-2	RIVER	24.958 MILES	Santa Clara River and tributaries from Gunlock Reservoir to Baker Dam Reservoir (includes Magotsu Creek)
Cause	Cycle First Listed	TMDL Status	Use	Source
Temperature, water	2008	Low Priority	Cold Water Aquatic Life	<ul style="list-style-type: none"> • Source Unknown

Impaired Streams and Lakes Requiring a TMDL - Lower Colorado Watershed

AU ID	AU Name	Water Type	Size	Location Description
UT15010008-004_00	Virgin River-2	RIVER	41.11 MILES	Virgin River and tributaries from Santa Clara River confluence to Quail Creek diversion, excluding Quail, Ash, and La Verkin Creeks
Cause	Cycle First Listed	TMDL Status	Use	Source
Boron	2008	Low Priority	Agricultural	<ul style="list-style-type: none"> • Source Unknown • Drought-related Impacts
Temperature, water	2008	Low Priority	Warm Water Aquatic Life	
AU ID	AU Name	Water Type	Size	Location Description
UT15010008-013_00	North Fork Virgin River-2	RIVER	34.805 MILES	North Fork Virgin River and tributaries from Deep Creek confluence to headwaters
Cause	Cycle First Listed	TMDL Status	Use	Source
Escherichia coli	2010	Low Priority	Secondary Recreation	<ul style="list-style-type: none"> • Natural Sources • Other Recreational Pollution Sources • Rangeland Grazing
AU ID	AU Name	Water Type	Size	Location Description
UT15010008-015_00	North Fork Virgin River-1	RIVER	38.317 MILES	North Fork Virgin River and tributaries from confluence with East Fork Virgin River to Kolob Creek confluence

Impaired Streams and Lakes Requiring a TMDL - Lower Colorado Watershed

Cause	Cycle First Listed	TMDL Status	Use	Source
Temperature, water	2010	Low Priority	Cold Water Aquatic Life	<ul style="list-style-type: none"> • Natural Sources • Source Unknown
AU ID	AU Name	Water Type	Size	Location Description
UT15010010-001_00	Virgin River-1	RIVER	15.242 MILES	Virgin River from state line to Santa Clara River confluence
Cause	Cycle First Listed	TMDL Status	Use	Source
Boron	2010	Low Priority	Agricultural	<ul style="list-style-type: none"> • Agriculture • Source Unknown
Temperature, water	2006	Low Priority	Warm Water Aquatic Life	

Table 10-3 Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Assessment Results for Lower Colorado River Watershed Stream Assessment Units						
AU ID	AU Name		Water Type	Size	Location Description	
UT15010003-001_00	Cottonwood Canyon		RIVER	8.616 MILES	Cottonwood Canyon from Utah-Arizona state line to headwaters	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				
Wildlife Habitat	Fully Supporting	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010003-002_00	Kanab Creek-1		RIVER	17.637 MILES	Kanab Creek and tributaries from state line to the confluence with Fourmile Hollow near the White Cliffs	

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Not Supporting	N	Total Dissolved Solids	2008		<ul style="list-style-type: none"> • Natural Sources • Agriculture
Non-Game Fish and Other Aquatic Life	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010003-003_00	Kanab Creek-2		RIVER	5.812 MILES	Kanab Creek and tributaries from the confluence with Fourmile Hollow near the White Cliffs to Reservoir Canyon	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Fully Supporting	N				
Non-Game Fish and Other Aquatic Life	Fully Supporting	N				

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010003-004_00	Johnson Wash-1		RIVER	11.964 MILES	Johnson Wash and tributaries from Utah-Arizona state line to Skutumpah Canyon confluence	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Not Supporting	N	Total Dissolved Solids	2008		• Agriculture
Non-Game Fish and Other Aquatic Life	Not Assessed	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Assessment Results for Lower Colorado River Watershed Stream Assessment Units						
UT15010003-005_00	Johnson Wash-2		RIVER	25.619 MILES	Johnson Wash and tributaries, from (including) Skutumpah Canyon to headwaters	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Fully Supporting	N				
Cold Water Aquatic Life	Not Assessed	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010003-006_00	Kanab Creek-3		RIVER	0.029 MILES	Kanab Creek and tributaries from Reservoir Canyon to headwaters	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Agricultural	Not Assessed	N				
Cold Water Aquatic Life	Not Assessed	N				
Domestic Water Supply	Not Assessed	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-001_00	Santa Clara-1		RIVER	23.667 MILES	Santa Clara River from confluence with Virgin River to Gunlock Reservoir	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Not Supporting	N	Boron Total Dissolved Solids	2008 1994	Completed	<ul style="list-style-type: none"> • Source Unknown • Hydromodification

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Domestic Water Supply	Fully Supporting	N				<ul style="list-style-type: none"> • Natural Sources • Agriculture • Urban Runoff/Storm Sewers
Secondary Recreation	Not Assessed	N				
Warm Water Aquatic Life	Not Supporting	N	Selenium Temperature, water	2006 2008	Completed	
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-002_00	Santa Clara-2		RIVER	24.958 MILES	Santa Clara River and tributaries from Gunlock Reservoir to Baker Dam Reservoir (includes Magotsu Creek)	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Fully Supporting	N				<ul style="list-style-type: none"> • Source Unknown
Cold Water Aquatic Life	Not Supporting	N	Temperature, water	2008		

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Domestic Water Supply	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-003_00	Santa Clara-3		RIVER	14.815 MILES	Santa Clara River and tributaries from Baker Dam Reservoir to headwaters	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Fully Supporting	N				
Cold Water Aquatic Life	Fully Supporting	N				
Domestic Water Supply	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Assessment Results for Lower Colorado River Watershed Stream Assessment Units						
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-004_00	Virgin River-2		RIVER	41.11 MILES	Virgin River and tributaries from Santa Clara River confluence to Quail Creek diversion, excluding Quail, Ash, and La Verkin Creeks	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Not Supporting	N	Boron	2008		<ul style="list-style-type: none"> • Source Unknown • Drought-related Impacts
Secondary Recreation	Insufficient Information	N				
Warm Water Aquatic Life	Not Supporting	N	Temperature, water	2008		
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-005_00	Quail Creek		RIVER	9.926 MILES	Quail Creek and tributaries from Quail Creek Reservoir to headwaters	

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Not Assessed	N				
Cold Water Aquatic Life	Not Assessed	N				
Domestic Water Supply	Not Assessed	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-006_00	Leeds Creek		RIVER	13.862 MILES	Leeds Creek and tributaries from confluence with Quail Creek to headwaters	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Fully Supporting	N				

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Cold Water Aquatic Life	Fully Supporting	N				
Domestic Water Supply	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-007_00	Ash Creek-1		RIVER	0.01 MILES	Ash Creek and tributaries from confluence with La Verkin Creek to springs near Toquerville	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Not Assessed	N				
Cold Water Aquatic Life	Not Assessed	N				

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-008_00	Ash Creek-2		RIVER	0.01 MILES	Ash Creek and tributaries from springs near Toquerville to Ash Creek Reservoir	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Not Assessed	N				
Cold Water Aquatic Life	Not Assessed	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-009_00	Ash Creek-3		RIVER	35.745 MILES	Ash Creek and tributaries from Ash Creek Reservoir to headwaters	

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Assessment Results for Lower Colorado River Watershed Stream Assessment Units						
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Fully Supporting	N				
Cold Water Aquatic Life	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-010_00	Laverkin Creek		RIVER	45.729 MILES	La Verkin Creek and tributaries from confluence with Virgin River to headwaters (excludes Ash Creek)	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Warm Water Aquatic Life	Fully Supporting	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-011_00	Virgin River-3		RIVER	4.072 MILES	Virgin River and tributaries from Quail Creek Diversion to North Creek confluence	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Fully Supporting	N				
Domestic Water Supply	Fully Supporting	N				
Non-Game Fish and Other Aquatic Life	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Warm Water Aquatic Life	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-012_00	Virgin River-4		RIVER	22.553 MILES	Virgin River and tributaries from North Creek confluence to Norh Fork Virgin River	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Fully Supporting	N				
Domestic Water Supply	Fully Supporting	N				
Non-Game Fish and Other Aquatic Life	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Assessment Results for Lower Colorado River Watershed Stream Assessment Units						
UT15010008-013_00	North Fork Virgin River-2		RIVER	34.805 MILES	North Fork Virgin River and tributaries from Deep Creek confluence to headwaters	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Not Assessed	N	Escherichia coli	2010		<ul style="list-style-type: none"> • Other Recreational Pollution Sources • Rangeland Grazing • Natural Sources
Cold Water Aquatic Life	Not Assessed	N				
Secondary Recreation	Not Supporting	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-014_00	North Creek		RIVER	32.712 MILES	North Creek and tributaries from confluence with Virgin River to headwaters	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Agricultural	Not Supporting	N	Total Dissolved Solids	1998	Completed	<ul style="list-style-type: none"> Natural Sources Agriculture
Domestic Water Supply	Fully Supporting	N				
Non-Game Fish and Other Aquatic Life	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-015_00	North Fork Virgin River-1		RIVER	38.317 MILES	North Fork Virgin River and tributaries from confluence with East Fork Virgin River to Kolob Creek confluence	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Fully Supporting	N				<ul style="list-style-type: none"> Natural Sources Source Unknown
Cold Water Aquatic Life	Not Supporting	N	Temperature, water	2010		

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Domestic Water Supply	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-016_00	Kolob Creek		RIVER	15.694 MILES	Kolob Creek and tributaries from confluence with North Fork Virgin River to headwaters	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Not Assessed	N				
Cold Water Aquatic Life	Not Assessed	N				
Secondary Recreation	Not Assessed	N				

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-017_00	Deep Creek		RIVER	60.388 MILES	Deep Creek and tributaries from confluence with North Fork Virgin River to headwaters	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Not Assessed	N				
Cold Water Aquatic Life	Not Assessed	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-018_00	East Fork Virgin-1		RIVER	37.093 MILES	East Fork of Virgin River and tributaries from confluence with North Fork Virgin River to Carmel Junction	

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Fully Supporting	N				
Cold Water Aquatic Life	Fully Supporting	N				
Domestic Water Supply	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-019_00	East Fork Virgin-2		RIVER	18.735 MILES	East Fork Virgin River and tributaries from Carmel Junction to Glendale	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Fully Supporting	N				

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Cold Water Aquatic Life	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				
AU ID	AU Name		Water Type	Size	Location Description	
UT15010008-020_00	East Fork Virgin-3		RIVER	28.757 MILES	East Fork Virgin River and tributaries from Glendale to headwaters	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Fully Supporting	N				
Cold Water Aquatic Life	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Assessment Results for Lower Colorado River Watershed Stream Assessment Units						
AU ID	AU Name		Water Type	Size	Location Description	
UT15010010-001_00	Virgin River-1		RIVER	15.242 MILES	Virgin River from state line to Santa Clara River confluence	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source
Agricultural	Not Supporting	N	Boron	2010		<ul style="list-style-type: none"> • Agriculture • Source Unknown
Secondary Recreation	Not Assessed	N				
Warm Water Aquatic Life	Not Supporting	N	Temperature, water	2006		
AU ID	AU Name		Water Type	Size	Location Description	
UT15010010-002_00	Beaver Dam Wash		RIVER	24.426 MILES	Beaver Dam Wash and tributaries from Motoqua to headwaters	
Use	Attainment	Threatened	Cause	Cycle First Listed	TMDL Status	Source

Assessment Results for Lower Colorado River Watershed Stream Assessment Units

Agricultural	Fully Supporting	N				
Secondary Recreation	Not Assessed	N				
Warm Water Aquatic Life	Fully Supporting	N				

Table 10-4 Assessment Results for Lower Colorado River Watershed Lake Assessment Units

Assessment Results for Lower Colorado River Watershed Lake Assessment Units

						Parameters Not Supporting 2010					Assessment Cycle						
		Assessment		Parameters						Total P > 0.025 mg/L or TSI>50	Winter DO/Fish Kills	Cyano Bacteria Present					
Assessment		Category	Assessment Category	Not Supporting	DO	pH	T	Other				2002	2004	2006	2008	2010	
Unit ID	Name	2008	2010	2008													
UT-L-15010008-008	Baker Dam Reservoir	4	4	DO								Y	NS	NS	NS	NS	
UT-L-15010008-001	Gunlock Reservoir	4A	4A	DO	NS	FS	FS			TP, TSI		Y	NS	NS	NS	NS	
UT-L-15010008-018	Kolob Reservoir	2	2		FS	FS	FS			No		ND	NS	NS	FS	FS	

Assessment Results for Lower Colorado River Watershed Lake Assessment Units

		Parameters Not Supporting 2010								Assessment Cycle						
Assessment		Assessment Category	Assessment Category	Parameters Not Supporting					Total P > 0.025 mg/L or TSI>50	Winter DO/Fish Kills	Cyano Bacteria Present					
Unit ID	Name	2008	2010	2008	DO	pH	T	Other				2002	2004	2006	2008	2010
UT-L-15010008-024	Quail Creek Reservoir	2	2	FS							N	FS	FS	FS	FS	

Assessment Results for Lower Colorado River Watershed Lake Assessment Units

		Parameters Not Supporting 2010										Assessment Cycle							
Assessment		Parameters										Total P > 0.025 mg/L or TSI>50	Winter DO/Fish Kills	Cyano Bacteria Present					
Unit ID	Name	Assessment Category 2008	Assessment Category 2010	Parameters Not Supporting 2008	DO	pH	T	Other											

Notes:

FS Fully Supporting

NS Not Supporting

Y Yes

N No

DO Dissolved Oxygen

FK Fish Kill

T Temperature

Total P Total Phosphorus

NA Not Analyzed

Table 10-5 Individual Lake and Reservoir 2010 Trophic State Index (TSI)

Individual Lake and Reservoir 2010 Trophic State Index (TSI)						
Watershed Management Unit	Assessment Unit	Name	Date	TSI-SD	TSI-Chla	TSI-TP
Lower Colorado River	UT-L-15010008-001	Gunlock Reservoir	9/5/2007	57	55	72
Lower Colorado River	UT-L-15010008-018	Kolob Reservoir	8/23/2007	45	15	37
<p>Notes:</p> <p>TSI-SD = Trophic State Index from secchi disk</p> <p>TSI-Chla = Trophic State Index from chlorophyll-a</p> <p>TSI-TP = Trophic State Index from total phosphorus</p>						

Table 10-6 Summary of Individual Lake and Reservoir Trophic State Index (TSI)

Summary of Individual Lake and Reservoir Trophic State Index (TSI)														
Watershed Management Unit	Assessment Unit	Lake / Reservoir	Assessment Cycle Trophic State Index										Trophic State	
			1992	1994	1996	1998	2000	2002	2004	2008	2010 Old Method	2010 Current Method	2010 Old Method	2010 Current Method
Lower Colorado River	UT-L-15010008-001	Gunlock Reservoir	42	42	47	43	40	39	43	54	61	55	E	E
Lower Colorado River	UT-L-15010008-018	Kolob Reservoir	42	48	45	44	35	35	32	41	32	15	O	O

Summary of Individual Lake and Reservoir Trophic State Index (TSI)														
Watershed Management Unit	Assessment Unit	Lake / Reservoir	Assessment Cycle Trophic State Index										Trophic State	
			1992	1994	1996	1998	2000	2002	2004	2008	2010 Old Method	2010 Current Method	2010 Old Method	2010 Current Method
<p>Notes:</p> <p>2010 Old Method TSI calculated using the 2008 Integrated Report Methodology</p> <p>2010 Current Method TSI calculated using the 2010 Integrated Report Methodology of only chlorophyll-a</p> <p>O = Oligotrophic</p> <p>M = Mesotrophic</p> <p>E = Eutrophic</p> <p>H = Hypereutrophic</p>														

FIGURES

Lower Colorado River Management Unit

Beneficial Use Classification and Monitoring Sites

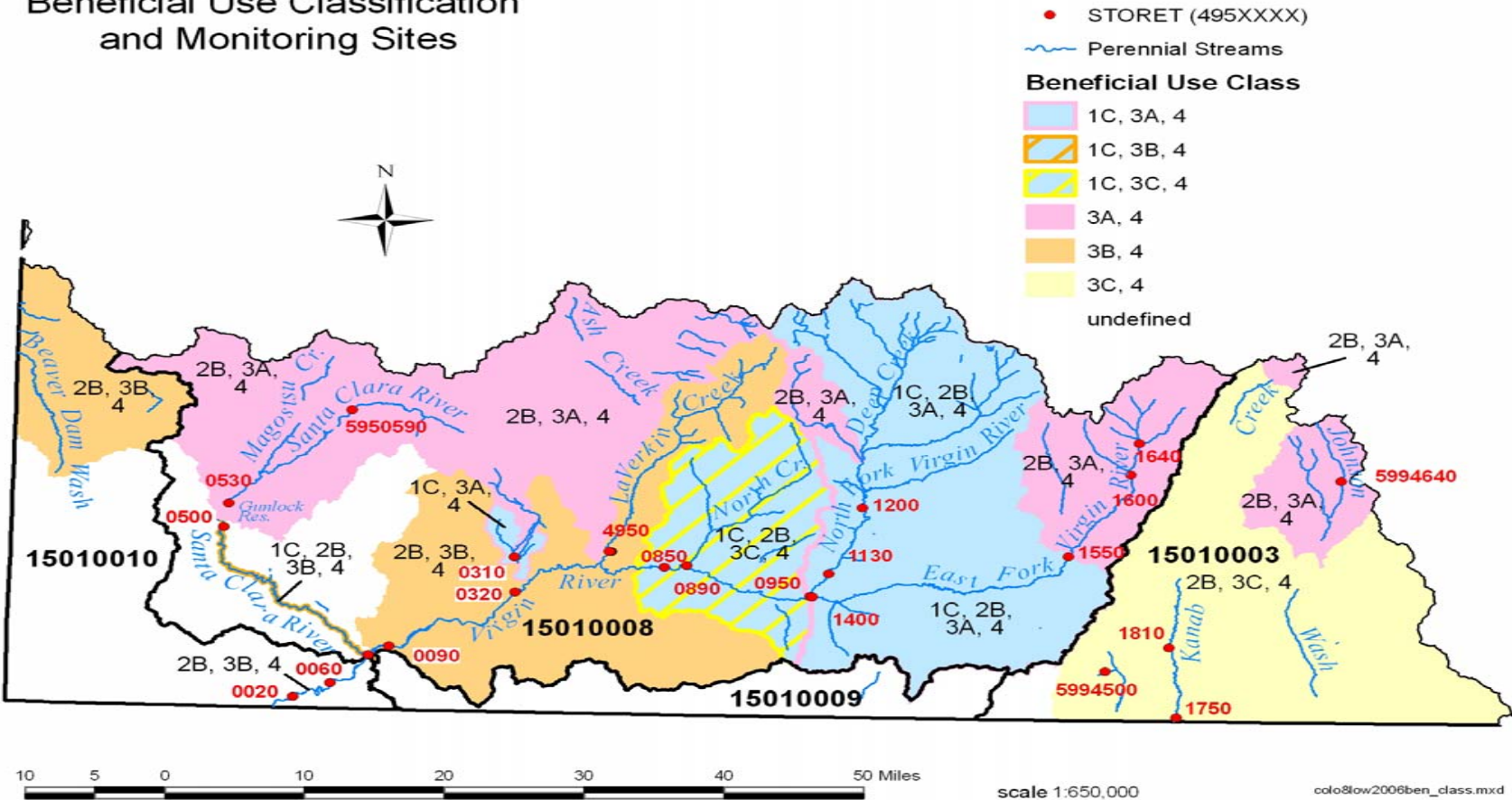


Figure 10-1 Beneficial Use Classes for Lower Colorado River Watershed Management Unit