Colorado – Lower Gila Watershed

Watershed Description

This watershed is defined by the Colorado River drainage area, from Hoover Dam at Lake Mead to the Mexico border near Yuma. It does not include the Bill Williams River drainage or the Gila River above Painted Rocks Dam.
Land ownership is divided approximately as: 89% federal, 6% state, 4% tribal, and 1% private. Except for communities along the Colorado River (e.g., Yuma, Bullhead City, Lake Havasu City, Kingman), most of this 14,459 square mile watershed is sparsely populated with only 187,700 people (2000 census).

Due in part to the sparse population, six wildlife refuges and three wilderness areas have been established in this watershed, along with several military bases with live fire exercise areas. All of these have restricted land uses. Tribal and private land is primarily along the Colorado River and lower Gila River and is intensively cultivated. Open grazing occurs across the watershed.

Elevations range from 5,450 feet (above sea level) in the mountains near Lake Mohave to 80 feet along the Colorado River as it flows into Mexico. The area contains low desert fauna and flora, and support warmwater aquatic communities where perennial waters exist.

Water Resources

Precipitation is meager, varying from 3 to 10 inches a year. Perennial water is limited to the Colorado River mainstem and its reservoirs, with irrigation return flow providing perennial flow in the Gila River near Yuma.

An estimate of surface water resources in the Colorado – Lower Gila Watershed is provided in the following table. Waters on Tribal lands are not assessed by ADEQ; therefore, those statistics are shown separately.

Estimated Surface Water Resources in the Colorado – Grand – Lower Gila Watershed

	Perennial	Intermittent	Ephemeral
Stream miles	375	145	13,545
	Perennial	Non-perennial	
Lake acres	36,860	0	

Additional Water Resources on Tribal Lands – Not Assessed

	Perennial	Intermittent	Ephemeral
Stream miles	75	0	535
	Perennial	Non-perennial	
Lake acres	245	0	

Ambient monitoring focuses on perennial waters; however, special investigations may identify water quality problems on intermittent and even ephemeral waters. Estimated miles and acres are based on USGS digitized hydrology at 1:100,000 and have been rounded to the nearest 5 miles or 5 acres.

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Assessments

The Colorado – Lower Gila Watershed is separated into the following drainage areas (subwatersheds):

15030101	Mohave -Havasu
15030103	Sacramento Wash
15030104	Imperial Reservoir
15030105	Bouse Wash
15030106	Tyson Wash
15030107	Lower Colorado
15030108	Yuma Desert
15070201	Lower Gila
15070202	Tenmile Wash
15070203	San Cristobal Wash

These drainage areas and the surface waters assessed as "attaining" or "impaired" are illustrated on the following watershed map. Methods used to complete these assessments are described in the "Surface Water Assessment Methods and Technical Support" document.

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CASTLE DOME WASH

Headwaters - Gila River
15070201-024
17.39 Miles

Category 2
Attaining some uses

Use Support

PBC - Attaining • AWE - Inconclusive

No Exceedances

Monitoring Summary

Sampling period: 1/15/2013 - 5/14/2014

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE GILA RIVER CONFLUENCE	CLCDW000.20	109602	ADEQ	TMDL Monitoring
AT DOME CANAL RELEASE	CLCDW000.59	109462	ADEQ	TMDL Monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(3-8) Boron, copper, lead, manganese, selenium	(0) None	(2-8) Dissolved oxygen, *E. coli*, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	Zinc (dissolved), cadmium (dissolved), copper (dissolved)
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

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COLORADO RIVER

Hoover Dam - Lake Mohave
15030101-015
40.4 Miles

Category 5
Impaired

IMPAIRMENT STATUS

Selenium (2004)

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive • AWC - Impaired

No Exceedances

Monitoring Summary

Sampling period: No samples

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
N/A				

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(0) None	(0) None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All core parameters
Missing Seasonal Distribution	All core parameters
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
High	Collect selenium samples to support TMDL development. Collect all core parameters to represent at least 3 seasons during the assessment period.

Impairment Discussion
Reach remains impaired for selenium (2004).

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COLORADO RIVER

Bill Williams River - Osborne Wash
15030104-020
13.359 Miles

Category 2
Attaining some uses

DWS - Attaining • FC - Attaining • FBC - Inconclusive
AGI - Attaining • AGL - Attaining • AWW - Attaining

Draft

No Exceedances

Monitoring Summary

Sampling period: 8/19/2010 - 8/12/2013

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BELOW PARKER DAM USGS 09427520	CLCLR195.22	100742	USGS	Ambient Monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(13) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(13) Nitrite_nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-13) Dissolved oxygen, *E. coli*, pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	*E. coli*
Missing Seasonal Distribution	*E. coli*
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Delist selenium (2010) from the 303(d) list. No selenium exceedances in 13 samples. Total selenium concentrations ranged between 1.1 and 1.7 ug/L. Collect core parameters to represent at least 3 seasons during an assessment period.

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COLORADO RIVER

Indian Wash - Imperial Dam
15030104-001
17.0 Miles

Category 1
Attaining all uses

DWS - Attaining • FC - Attaining • FBC - Attaining
AGI - Attaining • AGL - Attaining • AWW - Attaining

Use Support

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dissolved oxygen	6.0 mg/L	8/22/2012	5.8 mg/L	AWW is attaining with 1 exceedance in 12 samples (binomial).

Monitoring Summary

Sampling period: 8/17/2010 - 8/14/2013

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE IMPERIAL DAM USGS 09429490	CLCLR048.36	100752	USGS	Ambient Monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(13) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(13) Nitrite_nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(4-13) Dissolved oxygen, *E. coli*, pH, SSC

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	None
Missing Seasonal Distribution	None
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Delist selenium (2010) from the 303(d) list. AWW is attaining with no selenium exceedances in 13 samples for this assessment period.

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COLORADO RIVER

Main Canal - Mexico border
15030107-001
32.194 Miles

Category 5
Impaired

IMPAIRMENT STATUS

Selenium (2006)

DWS - Inconclusive • FC - Inconclusive • FBC - Attaining
AGI - Inconclusive • AGL - Inconclusive • AWW - Impaired

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Dieldrin (dissolved)	0.002 ug/L (DWS) 0.00005 ug/L (FC) 0.003 ug/L (AGI and AGL)	10/26/2010	0.006 ug/L	DWS, FC, AGI and AGL are inconclusive with 1 exceedance in 1 sample. All other samples had detection limits greater than the standard. This exceedance is based on an estimated value below a detection limit.
Dissolved oxygen	6.0 mg/L	8/17/2011	5.6 mg/L	AWW is attaining with 2 exceedances in 55 samples (binomial).
		10/17/2012	5.4 mg/L	
Selenium (dissolved)	2 ug/L	8/16/2010	2.2 ug/L*	AWW remains impaired with 6 chronic exceedances in 47 samples. Note: The exceedances are based on the dissolved fraction. *Corresponding total recoverable value did not exceed the standard.
		1/27/2011	2.1 ug/L	
		8/17/2011	2.4 ug/L	
		5/8/2012	2.2 ug/L*	
		6/26/2012	2.2 ug/L	
		1/30/2013	3.6 ug/L	

Monitoring Summary

Sampling period: 8/16/2010 - 12/17/2014

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
ABOVE MORELOS DAM USGS 09522000	CLCLR023.30	100744	USGS	Ambient Monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(17) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(11-55) Nitrate, nitrite, nitrite/nitrate, nitrogen, phosphate, phosphorus, total Kjeldahl nitrogen	(13-55) Dissolved oxygen, *E. coli*, pH, SSC, simazine, total dissolved solids

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Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dieldrin (dissolved)
Missing Core Parameters	Nitrite/nitrate
Missing Seasonal Distribution	Nitrite/nitrate
Lab Detection Limits Not Low Enough	Dieldrin (dissolved)

Priority	Monitoring Recommendations
High	Collect samples to support TMDL development. Collect more dieldrin samples and use a lower reporting limit.

Impairment Discussion
Reach remains impaired for selenium with additional exceedances. AWW is no longer impaired for dissolved oxygen with only 2 exceedances in 55 samples (binomial). Remove dissolved oxygen (2006) from the 303(d) list.

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GILA GRAVITY MAIN CANAL

Imperial Dam - HUC Boundary 15070201
15030107-292
11.9 Miles

Category 3
Inconclusive

DWS - Inconclusive • AGI - Inconclusive • AGL - Inconclusive

Use Support

No Exceedances

Monitoring Summary

Sampling period: 6/20/2012 - 5/14/2014

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
NEAR IMPERIAL DAM	CLGGCX30CDB	109162	ADEQ	TLG

Metal Samples	Nutrients & Related Samples	Other Samples
(1-8) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(2) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(1-8) Dissolved oxygen, *E. coli*, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	Nitrite/nitrate, arsenic, chromium
Missing Seasonal Distribution	Nitrite/nitrate, arsenic, chromium
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Collect core parameters to represent at least 3 seasons during an assessment period.

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GILA RIVER

Coyote Wash - Castle Dome Wash
15070201-003A
22.54 Miles

Category 3
Inconclusive

FC - Inconclusive • FBC - Inconclusive • AGI - Inconclusive
AGL - Inconclusive • AWW - Inconclusive

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Boron	1000 ug/L	4/5/2013	2000 ug/L	AGI is inconclusive with 3 exceedances in 4 samples (binomial). Note: These excedances occurred during low flow/ non-representative flow conditions.
		1/14/2014	1400 ug/L	
		3/26/2014	2100 ug/L	
Dissolved oxygen	6.0 mg/L	8/27/2013	1.38 mg/L	AWW is inconclusive with 1 exceedance in 4 samples. The exceedance on 1/14/14 due to groundwater upwelling.
		1/14/2014	3.61 mg/L	
Selenium	2 ug/L	4/5/2013	6.7 ug/L	AWW is attaining. The exceedance was determined noncredible due to unreliable lab method.

Monitoring Summary

Sampling period: 6/19/2012 - 5/14/2014

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT COUNTY 5TH ST. S	CLGLR016.14	109582	ADEQ	TMDL Monitoring
AT POWERLINE CROSSING	CLGLR013.33	109102	ADEQ	TMDL Monitoring
AT AVENUE 20 EAST OVERPASS	CLGLR021.88	109943	ADEQ	TMDL Monitoring
AT COUNTY 8TH ST	CLGLR019.96	109942	ADEQ	TMDL Monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(1-6) Boron, cadmium, chromium, copper, lead, manganese, selenium, zinc	(0) None	(5-6) Dissolved oxygen, pH, total dissolved solids

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Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	Dissolved oxygen
Missing Core Parameters	Zinc (dissolved), cadmium (dissolved), copper (dissolved), *E. coli*, manganese, copper, mercury (or mercury in fish tissue)
Missing Seasonal Distribution	Zinc (dissolved), pH, cadmium (dissolved), copper (dissolved), *E. coli*, manganese, copper, mercury
Lab Detection Limits Not Low Enough	None

Priority	Monitoring Recommendations
Low	Delist selenium and boron (2004) from the 303(d) list. The reach 003 was split into two reaches at the Castle Dome Wash confluence based on a change in hydrologic flow regime, and the impairment status does not apply to this upper reach. Additional monitoring for boron and dissolved oxygen is recommended although it may be challenging due to the intermittency and infrequency of representative stream flow.

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GILA RIVER

Castle Dome Wash - Fortuna Wash
15070201-003B
5.71 Miles

Category 2
Attaining some uses

FC - Inconclusive • FBC - Inconclusive • AGI - Attaining
AGL - Attaining • AWW - Attaining

Use Support

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Boron	1000 ug/L	5/13/2014	1200 ug/L	AGI is attaining with 1 exceedance in 12 samples (binomial).
Dissolved oxygen	6.0 mg/L	6/20/2012	1.75 mg/L	AWW is attaining. All exceedances due to groundwater upwelling.
		1/14/2013	3.19 mg/L	
E. coli	235 cfu/100 mL	6/19/2012	980.4 cfu/100 mL	FBC is inconclusive. Only 1 SSM exceedance in the last 3 years of assessment (7/1/12 - 6/30/15).
		11/20/2012	2419.6 cfu/100 mL	
Selenium	2 ug/L	6/20/2012	3.6 ug/L	AWW is attaining. Exceedances on 6/20/12 and 8/23/12 were determined noncredible due to unreliable lab method. The exceedance on 9/9/13 occurred during a storm event, which did not represent chronic conditions.
		8/23/2012	2.8 ug/L	
		9/9/2013	18.7 ug/L	

Monitoring Summary

Sampling period: 6/19/2012 - 5/14/2014

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
AT GRAVITY MAIN CANAL SIPHON	CLGLR008.81	109122	ADEQ	TMDL Monitoring
ABOVE UNNAMED TRIBUTARY	CLGLR011.17	109103	ADEQ	TMDL Monitoring
NEAR DOME, AZ USGS 09520500	CLGLR010.53	100455	ADEQ	TMDL Monitoring
ABOVE BLM CAMPGROUND	CLGLR007.11	109362	ADEQ	TMDL Monitoring

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Metal Samples	Nutrients & Related Samples	Other Samples
(3-39) Antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, nickel, selenium, silver, zinc	(6) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(8-26) Dissolved oxygen, *E. coli*, pH, total dissolved solids

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	*E. coli*
Missing Core Parameters	None
Missing Seasonal Distribution	*E. coli*, mercury
Lab Detection Limits Not Low Enough	Lead (dissolved), mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Delist selenium and boron (2004) from the 303(d) list. The reach 003 was split into two reaches at the Castle Dome Wash confluence based on a change in hydrologic flow regime. This lower reach inherited the impairment status, but evaluation of the new data indicated no impairment (only 1 exceedance in 12 samples for boron and no valid exceedances for selenium). Collect more *E. coli* samples due to the exceedances. Collect core parameters to represent at least 3 seasons during an assessment period.

ED_013248_00000551-00013

LAKE HAVASU

15030101-0590
19780 Acres

Category 3
Inconclusive

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive • AWW - Inconclusive

Use Support

Exceedances

Parameter	Applicable Standard	Date	Result	Designated use support comments
Selenium	2 ug/L	4/27/2015	2.2 ug/L	AWW is inconclusive with 1 exceedance in 1 sample.

Monitoring Summary

Sampling period: 4/24/2013 - 4/29/2015

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
BILL WILLIAMS INLET SITE TO LAKE HAVASU	CLHAV-BW	104377	ADEQ	Clean Lakes Program
AT PARKER DAM USGS 09427500	CLHAV-A	100098	ADEQ	Ambient Monitoring
COLORADO RIVER	CLHAV-CRA	100101	ADEQ	Ambient Monitoring
SITE C	CLHAV-C	100099	ADEQ	Ambient Monitoring
MID LAKE	CLHAV-B	100102	ADEQ	Ambient Monitoring
AT PILOT ROCK	CLHAV-PR	100157	ADEQ	Ambient Monitoring
MID THOMPSON BAY	CLHAV-TB	100170	ADEQ	Ambient Monitoring

Metal Samples	Nutrients & Related Samples	Other Samples
(1-7) Antimony, arsenic, beryllium, boron, cadmium, chromium, copper, lead, manganese, mercury, selenium, zinc	(7) Ammonia, nitrite/nitrate, nitrogen, phosphorus, total Kjeldahl nitrogen	(16) Dissolved oxygen, pH, total dissolved solids,

Data Gaps and Monitoring Needs

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Exceedances Needing More Samples to Assess	Selenium
Missing Core Parameters	Zinc (dissolved), *E. coli*
Missing Seasonal Distribution	Zinc (dissolved), dissolved oxygen, pH, cadmium (dissolved), copper (dissolved), *E. coli*, nitrite/nitrate, fluorine, arsenic, chromium, lead, boron, manganese, copper, mercury
Lab Detection Limits Not Low Enough	Selenium, mercury (dissolved)

Priority	Monitoring Recommendations
Medium	Collect more selenium samples due to the exceedance (Colorado River is impaired for selenium in upstream reaches). Collect core parameters to represent at least 3 seasons during an assessment period. Use a lower reporting limit for selenium.

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LAKE MOHAVE

15030101-0960
27044 Acres

Category 5
Impaired

IMPAIRMENT STATUS

Selenium (2010)

DWS - Inconclusive • FC - Inconclusive • FBC - Inconclusive
AGI - Inconclusive • AGL - Inconclusive • AWC - Impaired

No Exceedances

Monitoring Summary

Sampling period: No samples

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
N/A				

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(0) None	(0) None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All core parameters
Missing Seasonal Distribution	All core parameters
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
Low	Collect selenium samples to support TMDL development.

Impairment Discussion
Remains impaired for selenium (2010).

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PAINTED ROCK BORROW PIT LAKE

15070201-1010
186 Acres

Category 5
Impaired

IMPAIRMENT STATUS

Low dissolved oxygen (1992)

FC - Inconclusive • FBC - Inconclusive AGI - Inconclusive
AGL - Inconclusive • AWC - Impaired

No Exceedances

Monitoring Summary

Sampling period: No samples

Site Name(s)	Site ID #	DEQ #	Sampling Agency	Purpose
N/A				

Metal Samples	Nutrients & Related Samples	Other Samples
(0) None	(0) None	(0) None

Data Gaps and Monitoring Needs

Exceedances Needing More Samples to Assess	None
Missing Core Parameters	All core parameters
Missing Seasonal Distribution	All core parameters
Lab Detection Limits Not Low Enough	N/A

Priority	Monitoring Recommendations
Medium	Collect dissolved oxygen samples to support TMDL development when the lake refills.

Impairment Discussion
Remains impaired for dissolved oxygen (1992). Delisted pesticides in fish tissue (EPA 2002) in 2012/14 based on recent water quality and fish tissue data.

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