

## Chapter 2.16.7. Assessment Units With Elevated Levels of Phosphorus

Because total phosphorus does not directly affect water quality, but can be the cause of noxious aquatic plant growth and cause heavy blooms of algae that can reduce the level of oxygen in the water to the point that fish can be stressed or killed, it is important to look at waters that have elevated levels of phosphorus and determine the beneficial use support for aquatic life using some other method of assessment than just the concentration of total phosphorus.

Measuring dissolved diurnal oxygen levels is one method that can be used to determine beneficial use support. Another is to compare the benthic macroinvertebrate population to that of a reference site to determine if there are significant differences in the benthic macroinvertebrate populations. A direct evaluation of the fisheries population can also be used to obtain data and information about the possible effects of total phosphorus.

The DWQ has set the following guidance for possibly looking at waters with “high” levels of total phosphorus. If the mean concentration of total phosphorus for the sample set is  $>.06$  mg/L, and the indicator value of 0.05 mg/L is exceeded in more than 10% of the samples, the Assessment Unit (AU) is designated as one that needs further study.

Since the 2006 Integrated Report, dissolved oxygen and benthic macroinvertebrate data have been used to assess waters with elevated phosphorus levels. Some Assessment Units were removed from the list because the dissolved oxygen or benthic macroinvertebrate data indicated they were either supporting or not supporting the aquatic life beneficial use designation.

Figure 2.16.1 is a map of the AUs that have elevated levels of total phosphorus and have not been assessed further using dissolved oxygen or benthic macroinvertebrate data. The map also includes those AUs that were assessed using benthic macroinvertebrate data and could it could not be determined whether the aquatic life use was supported or not supported. Further evaluation of these AUs may determine the beneficial use support.

Table 2.16.1 is a list of the AUs that have elevated levels of phosphorus and the AUs that were assessed using benthic macroinvertebrate data.

# Elevated Total Phosphorus 2008

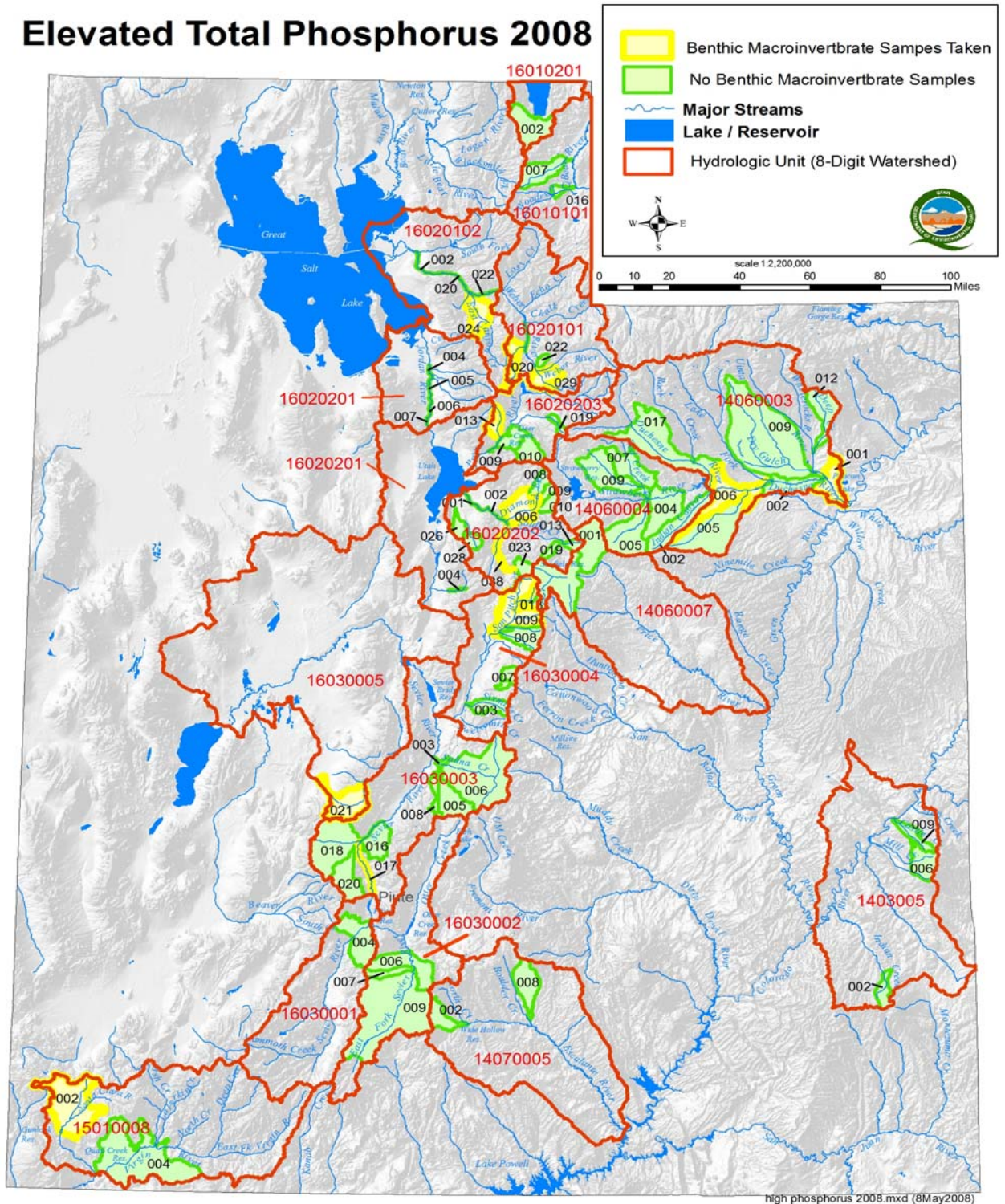


Figure 2.16.1. Assessment Units with elevated levels of phosphorus and Assessment Units where benthic macroinvertebrate data were collected but a determination of full or non support could not be made.

Table 2.16.1. Assessment Units With Elevated Phosphorus Levels and Those AU Assessed With Benthic Macroinvertebrate Data but an Assessment of Support Could Not Be Made.

Watershed Management Unit	Watershed ID	Watershed Name	Watershed Description	Stream Miles	Data Type Collected
Bear River	UT16010101-007	Big Creek	Big Creek and tributaries from Bear River to headwaters	26.84	High TP, No Benthic Data
Bear River	UT16010101-011	Woodruff Creek - 1	Woodruff Creek from confl/w Bear River to Birch Creek confluence	7.64	High TP, No Benthic Data
Bear River	UT16010201-002	Laketown	Laketown & Big Creek & other tribs from Bear Lake to headwaters	11.46	High TP, No Benthic Data
Colorado River Southeast	UT14030005-002	Indian Creek-2	Indian Creek from Newspaper Rock north boundary to headwaters	15.50	High TP, No Benthic Data
Colorado River Southeast	UT14030005-006	Mill Creek-2	Mill Creek and tributaries from U.S.F.S. boundary to headwaters	29.61	High TP, No Benthic Data
Colorado River Southeast	UT14030005-009	Castle Creek-1	Castle Creek and tributaries from confluence with Colorado River to Seventh-day Adventist diversion	9.06	High TP, No Benthic Data
Colorado River West	UT14060007-001	White River	White River from confluence w/Price River to Headwaters	32.74	High TP, No Benthic Data
Colorado River West	UT14060007-002	Scofield Reservoir Tribs	Scofield Reservoir tributaries	77.72	High TP, No Benthic Data
Colorado River West	UT14070005-002	Birch Creek	Birch Creek and tributaries from confluence w/Escalante River to headwaters	29.71	High TP, No Benthic Data
Colorado River West	UT14070005-008	Deer Creek	Deer Creek and tributaries from cnfluence w/Escalante River to headwaters	56.89	High TP, No Benthic Data
Jordan River	UT16020201-004	Salt Creek-1	Salt Creek from mouth of Canyon to USFS Boundary	5.31	High TP, No Benthic Data
Jordan River	UT16020202-001	Spanish Fork River-1	Spanish Fork River from Utah Lake to Moark Diversion	16.98	High TP, No Benthic Data
Jordan River	UT16020202-002	Spanish Fork River-2	Spanish Fork River from Moark Diversion to Thistle Creek confluence	6.48	High TP, No Benthic Data
Jordan River	UT16020202-006	Diamond Fork-1	Diamond Fork Creek from and tributaries from confluence w/ Spanish Fork River to Sixth Water confluence	20.06	High TP, Benthic Data Yes
Jordan River	UT16020202-007	Diamond Fork-2	Diamond Fork Creek from Sixth Water Creek confluence to Hawthorne Campground.	4.51	High TP, Benthic Data Yes

Table 2.16.1. Assessment Units With Elevated Phosphorus Levels and Those AU Assessed With Benthic Macroinvertebrate Data but an Assessment of Support Could Not Be Made.

Watershed Management Unit	Watershed ID	Watershed Name	Watershed Description	Stream Miles	Data Type Collected
Jordan River	UT16020202-008	Diamond Fork-3	Diamond Fork Creek and tributaries from Hawthorne Campground to headwaters-	22.92	High TP, No Benthic Data
Jordan River	UT16020202-009	Sixth Water Creek	Sixth Water Creek and tributaries except Fifth Water and First Water Creeks and tributaries from confluence w/ Diamond Fork Creek to headwaters	12.45	High TP, No Benthic Data
Jordan River	UT16020202-010	Third Water Creek	Third Water Creek and tributaries from confluence w/ Sixth Water Creek to headwaters	20.68	High TP, No Benthic Data
Jordan River	UT16020202-013	Soldier Creek-2	Soldier Creek and tributaries from confluence of Starvation Creek to headwaters	6.45	High TP, No Benthic Data
Jordan River	UT16020202-019	Clear Creek	Clear Creek and tributaries from confluence w/ Soldier Creek to headwaters	12.63	High TP, No Benthic Data
Jordan River	UT16020202-022	Thistle Creek-1	Thistle Creek from confluence with Soldier Creek to confluence with Little Clear Creek	18.27	High TP, Benthic Data Yes
Jordan River	UT16020202-023	Thistle Creek-2	Thistle Creek and tributaries from confluence with Little Clear Creek to headwaters	16.82	High TP, No Benthic Data
Jordan River	UT16020202-026	Spring Creek	Spring Creek and tributaries from confluence w/ Beer Creek to headwaters	11.01	High TP, No Benthic Data
Jordan River	UT16020202-028	Peteetneet Creek	Peteetneet Creek and tributaries from i Maple Dell Campground to headwaters	17.35	High TP, No Benthic Data
Jordan River	UT16020203-009	Main Creek-1	Main Creek and tributaries from Deer Creek Res to Round Valley	6.21	High TP, No Benthic Data
Jordan River	UT16020203-010	Main Creek-2	Main Creek and tributaries from Round Valley to headwaters	32.20	High TP, No Benthic Data
Jordan River	UT16020203-013	Provo Deer Creek	Provo Deer Creek and tributaries from confluence w/ Provo River to headwaters	19.14	High TP, Benthic Data Yes
Jordan River	UT16020203-019	Lake Creek-2	Lake Creek and tribuaries above Timber Creek confluence to headwaters	15.13	High TP, No Benthic Data
Jordan River	UT16020204-004	Jordan River-4	Jordan River from 2100 S to 6400 S	9.41	High TP, No Benthic Data
Jordan River	UT16020204-005	Jordan River-5	Jordan River from 6400 S to 7800 S	1.63	High TP, No Benthic Data

Table 2.16.1. Assessment Units With Elevated Phosphorus Levels and Those AU Assessed With Benthic Macroinvertebrate Data but an Assessment of Support Could Not Be Made.

Watershed Management Unit	Watershed ID	Watershed Name	Watershed Description	Stream Miles	Data Type Collected
Jordan River	UT16020204-006	Jordan River-6	Jordan River from 7800 S to Bluffdale	10.29	High TP, No Benthic Data
Jordan River	UT16020204-007	Jordan River-7	Jordan River from Bluffdale to Narrows	4.17	High TP, No Benthic Data
Lower Colorado River	UT15010008-002	Santa Clara-2	Santa Clara River and tributaries from Gunlock Reservoir to Baker Dam Reservoir (include Maogatsue Creek and tribs to USFS boundary.	24.96	High TP, Benthic Data Yes
Lower Colorado River	UT15010008-004	Virgin River-2	Virgin River and tributaries from Santa Clara River confluence to Quail Creek diversion (excludes Quail Creek and Ledds Creek)	41.11	High TP, No Benthic Data
Sevier River	UT16030001-002	Sevier River-4	Sevier River and tributaries from Piute Reservoir to Circleville Irrigation Diversion, excluding East Fork Sevier River and tributaries	16.21	High TP, No Benthic Data
Sevier River	UT16030002-006	East Fork Sevier-3	East Fork Sevier River and tributaries from Antimony Creek confluence to Deer Creek confluence	21.29	High TP, No Benthic Data
Sevier River	UT16030002-007	Deer Creek	Deer Creek and tributaries from confluence w/East Fork Sevier River to headwaters	17.60	High TP, No Benthic Data
Sevier River	UT16030002-009	East Fork Sevier-2	East Fork Sevier River and tributaries from Deer Creek confluence to Tropic Reservoir	127.67	High TP, No Benthic Data
Sevier River	UT16030003-003	Salina Creek-1	Salina Creek and tributaries from confluence w/Sevier River to USFS boundary	4.71	High TP, No Benthic Data
Sevier River	UT16030003-006	Salina Creek-2	Salina Creek and tributaries from USFS boundary to headwaters	133.94	High TP, No Benthic Data
Sevier River	UT16030003-008	Lost Creek-2	Lost Creek and tributaries from ~6 miles upstream to USFS boundary	7.46	High TP, No Benthic Data
Sevier River	UT16030003-010	Lost Creek-3	Lost Creek and tributaries USFS boundary to headwaters	26.68	High TP, No Benthic Data
Sevier River	UT16030003-016	Sevier River-10	Sevier River east side tributaries below USFS boundary from Anabelle Diversion upstream to Clear Creek confluence.	0.43	High TP, No Benthic Data

Table 2.16.1. Assessment Units With Elevated Phosphorus Levels and Those AU Assessed With Benthic Macroinvertebrate Data but an Assessment of Support Could Not Be Made.

Watershed Management Unit	Watershed ID	Watershed Name	Watershed Description	Stream Miles	Data Type Collected
Sevier River	UT16030003-017	Sevier River-6	Sevier River from Clear Creek confluence to HUC unit boundary	28.06	High TP, Benthic Data Yes
Sevier River	UT16030003-018	Clear Creek	Clear Creek and tributaries from confluence w/Sevier River to headwaters	101.38	High TP, No Benthic Data
Sevier River	UT16030003-019	Sevier River-9	Sevier River from Annabelle Diversion to Clear Creek confluence	11.53	High TP, No Benthic Data
Sevier River	UT16030003-020	Beaver Creek-2	Beaver Creek and other westside tributaries to Sevier River above USFS boundary from Clear Creek upstream to HUC boundary	16.72	High TP, No Benthic Data
Sevier River	UT16030004-003	Six Mile Creek	Six Mile Creek and tributaries from confluence w/San Pitch River to headwaters	27.41	High TP, No Benthic Data
Sevier River	UT16030004-007	Ephraim Creek	Ephraim Creek and tributaries from USFS boundary to headwaters	16.23	High TP, No Benthic Data
Sevier River	UT16030004-007	Ephraim Creek	Ephraim Creek and tributaries from USFS boundary to headwaters	16.23	High TP, No Benthic Data
Sevier River	UT16030004-008	Pleasant Creek	Pleasant Creek and tributaries from confluence w/San Pitch River to headwaters	50.39	High TP, No Benthic Data
Sevier River	UT16030004-009	San Pitch-5	San Pitch River and tributaries from beneficial U132 to Pleasant Creek confluence, excluding Cedar Creek, Oak Creek, Pleasant Cree and Cottowood Creek.	65.66	High TP, Benthic Data Yes
Sevier River	UT16030004-013	Cottonwood Creek-SP	Cottonwood Creek and tributaries from confluence w/San Pitch River to headwaters	9.35	High TP, No Benthic Data
Sevier River	UT16030005-021	Corn Creek	Corn Creek and tributaries from mouth to headwaters	45.94	High TP, Benthic Data Yes
Uinta Basin	UT14060003-001	Duchesne River-1	Duchesne River and tributaries from confluence Green River to Uinta River confluence.	19.49	High TP, Benthic Data Yes
Uinta Basin	UT14060003-002	Duchesne River-2	Duchesne River from Randlett to Myton.	31.59	High TP, No Benthic Data

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Watershed Management Unit	Watershed ID	Watershed Name	Watershed Description	Stream Miles	Data Type Collected
Uinta Basin	UT14060003-005	Antelope Creek	Antelope Creek and tributaries from confluence Duchesne River to headwaters.	31.57	High TP, No Benthic Data
Uinta Basin	UT14060003-006	Duchesne River-3	Duchesne River: from Myton to Strawberry River confluence.	39.45	High TP, Benthic Data Yes
Uinta Basin	UT14060003-009	Dry Gulch Creek	Dry Gulch Creek and tributaries from confluence Duchesne River to headwaters.	88.10	High TP, No Benthic Data
Uinta Basin	UT14060003-012	Deep Creek	Deep Creek and tributaries from confluence Uintah River to headwaters.	24.86	High TP, No Benthic Data
Uinta Basin	UT14060003-017	Duchesne River-4	Duchesne River and from Strawberry River confluence to West Fork Duchesne confluence.	67.50	High TP, No Benthic Data
Uinta Basin	UT14060004-002	Indian Canyon Creek	Indian Canyon Creek and tributaries from confluence Strawberry River to headwaters.	44.01	High TP, No Benthic Data
Uinta Basin	UT14060004-004	Stawberry River-2	Stawberry River and tributaries from Starvation Reservoir to Avintaquin Creek confluence.	16.36	High TP, No Benthic Data
Uinta Basin	UT14060004-005	Avintaquin Creek	Avintaquin Creek and tributaries confluence Strawberry River to headwaters.	53.84	High TP, No Benthic Data
Uinta Basin	UT14060004-006	Lower Red Creek	Red Creek and tributaries from confluence Strawberry River to Currant Creek Confluence.	5.20	High TP, No Benthic Data
Uinta Basin	UT14060004-007	Middle Red Creek	Red Creek and tributaries from confluence Current Creek to Red Creek Reservoir.	14.78	High TP, No Benthic Data
Uinta Basin	UT14060004-009	Lower Currant Creek	Current Creek and tributaries from Red Creek confluence to Current Creek Reservoir.	60.57	High TP, No Benthic Data
Weber River	UT16020101-017	Weber River-8	Weber River from Echo Reservoir to Rockport Reservoir	10.67	High TP, No Benthic Data
Weber River	UT16020101-020	Silver Creek	Silver Creek and tributaries from confluence w/Weber River to headwaters	21.37	High TP, Benthic Data Yes

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Watershed Management Unit	Watershed ID	Watershed Name	Watershed Description	Stream Miles	Data Type Collected
Weber River	UT16020101-022	Fort Creek	Fort Creek from confluence w/ Weber River to headwaters-tribs	9.58	High TP, No Benthic Data
Weber River	UT16020101-029	Beaver Creek-1	Beaver Creek from confluence with Weber River to Kamas	12.72	High TP, Benthic Data Yes
Weber River	UT16020102-002	Weber River-3	Weber River from Ogden River confluence to Cottonwood Creek confluence	17.86	High TP, No Benthic Data
Weber River	UT16020102-020	Weber River-4	Weber River from Cottonwood Creek confluence to Stoddard Diversion	9.50	High TP, No Benthic Data
Weber River	UT16020102-022	Weber River-6	Weber River between East Canyon Creek confluence and Lost Creek confluence	12.37	High TP, No Benthic Data
Weber River	UT16020102-024	East Canyon Creek -1	East Canyon Creek from confluence w/ Weber River to East Canyon Dam	15.27	High TP, Benthic Data Yes
Weber River	UT16020102-048	Weber River-5	Weber River from Stoddard Diversion to East Canyon Creek confluence	1.51	High TP, No Benthic Data