

2012 Integrated Report: Category 4c: Waters Impaired by Pollution, Not a Pollutant

2012 Integrated Report: Category 4c: Waters Impaired by Pollution

Southwest

17050101 C. J. Strike Reservoir

ID17050101SW012_02	Little Canyon Creek - 1st and 2nd order	31.04	MILES
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Other flow regime alterations

17050102 Bruneau

ID17050102SW002_05	Jacks Creek-Little Jacks Ck to CJ Strike Reservoir	12.28	MILES
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Low flow alterations

17050103 Middle Snake-Succor

ID17050103SW001_07	Snake River - Marsing (RM425) to State Line	16.09	MILES
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Other flow regime alterations

ID17050103SW002_04	Lower Succor Creek - 4th order (state line to mouth)	5.5	MILES
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Low flow alterations

ID17050103SW003_02	Upper Succor Creek - 1st and 2nd order tributaries	68.42	MILES
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Other flow regime alterations

ID17050103SW003_03	Upper Succor Creek - 3rd order (Granite Creek to State Line)	15.72	MILES
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Other flow regime alterations

ID17050103SW005_03	Jump Creek - 3rd order	18.4	MILES
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Low flow alterations

ID17050103SW012_04	Sinker Creek - 4th order	15.75	MILES
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Other flow regime alterations

ID17050103SW014_04	Castle Creek - lower 4th order (irrigated section)	9.2	MILES
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Other flow regime alterations

ID17050103SW014_05	Castle Creek - 5th order (Catherine Cr. to Snake River)	3.82	MILES
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Other flow regime alterations

17050104 Upper Owyhee

ID17050104SW028_02	Pole Creek - 1st and 2nd order	71.18	MILES
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Other flow regime alterations

ID17050104SW028_03	Pole Creek - 3rd order	6.41	MILES
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Other flow regime alterations

2012 Integrated Report: Category 4c: Waters Impaired by Pollution

ID17050104SW034_02	Red Canyon Creek - 1st and 2nd order	77.68	MILES
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Other flow regime alterations

ID17050104SW034_04	Red Canyon Creek - 4th order	2.95	MILES
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Other flow regime alterations

17050105 **South Fork Owyhee**

ID17050105SW001_06	SF Owyhee River - Nevada border to Little Owyhee River	19.62	MILES
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Other flow regime alterations

17050107 **Middle Owyhee**

ID17050107SW004_02	MF Owyhee River & tributaries - 1st and 2nd order	48.04	MILES
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Other flow regime alterations

ID17050107SW004_03	Middle Fork Owyhee River - 3rd order section	4.57	MILES
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Other flow regime alterations

ID17050107SW008_04	NF Owyhee River & Juniper Creek - 4th order	2.33	MILES
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Low flow alterations

ID17050107SW009_02	Pleasant Valley Cr. & Tribs - 1st & 2nd order	37.73	MILES
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Other flow regime alterations

ID17050107SW009_03	Pleasant Valley Creek - 3rd order section	5.67	MILES
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Other flow regime alterations

ID17050107SW012_02	Juniper Creek & tributaries - 1st & 2nd order	24.46	MILES
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Other flow regime alterations

ID17050107SW012_03	Juniper Creek - 3rd order section	6.86	MILES
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Other flow regime alterations

17050108 **Jordan**

ID17050108SW001_05	Jordan Creek - Williams Creek to State Line	13.35	MILES
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Low flow alterations

ID17050108SW013_02	Rock Creek above Triangle Reservoir - 1st and 2nd order	63.93	MILES
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Other flow regime alterations

ID17050108SW014_02	Louisa Creek - entire drainage	13.82	MILES
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Other flow regime alterations

ID17050108SW015_02	Spring and Meadow Creeks - 1st and 2nd order	48.87	MILES
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Other flow regime alterations

ID17050108SW015_03	Spring and Meadow Creeks - 3rd order sections	8.09	MILES
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Other flow regime alterations

2012 Integrated Report: Category 4c: Waters Impaired by Pollution

ID17050108SW021_02	Cow Creek - 1st and 2nd order	55.15	MILES
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Other flow regime alterations

ID17050108SW021_03	Cow Creek - 3rd order (Wildcat Canyon to Soda Creek)	3.41	MILES
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Other flow regime alterations

17050112 Boise-Mores

ID17050112SW009_02	Mores Creek - 1st and 2nd order	133.19	MILES
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Physical substrate habitat alterations

ID17050112SW009_03	Mores Creek - 3rd order (Hayfork Creek to Elk Creek)	12.31	MILES
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Physical substrate habitat alterations

ID17050112SW009_04	Mores Creek - 4th order (Elk Creek to Grimes Creek)	8.84	MILES
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Physical substrate habitat alterations

5/25/2010 (NED) - During the development of the Boise-Mores Creek Subbasin Assessment and TMDL, it was determined that habitat and flow alteration is due to impacts of extensive historic placer mining that took place in the basin.

ID17050112SW013_03	Grimes, Clear and Smith Creeks - 3rd order sections	8.55	MILES
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Physical substrate habitat alterations

ID17050112SW013_04	Grimes Creek - 4th order (Clear Creek to Granite Creek)	9.54	MILES
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Physical substrate habitat alterations

ID17050112SW013_05	Grimes Creek - 5th order (Granite Creek to mouth)	14.65	MILES
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Physical substrate habitat alterations

17050113 South Fork Boise

ID17050113SW007L_0L	Little Camas Reservoir	965.21	ACRES
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Low flow alterations

ID17050113SW032_03	Smith Creek - 3rd order (Mule Gulch to SF Boise River)	16.47	MILES
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Low flow alterations

17050114 Lower Boise

2012 Integrated Report: Category 4c: Waters Impaired by Pollution

ID17050114SW001_06 Boise River - Indian Creek to mouth

44.61 MILES

Physical substrate habitat alterations

Low flow alterations

The lower Boise River from Diversion Dam to the mouth is NOT listed for flow or habitat alteration despite listing of the reach immediately above for flow alteration. The lower Boise River is a highly regulated stream with three upstream reservoirs that are jointly operated to meet irrigation, flood control and other uses.

Flow and habitat assessments have been done on the lower Boise River by Idaho Fish and Game, Asbridge and Bjornn (1988), and USGS (1997). These studies, in addition to chemical, physical and biological data collected by USGS for the Lower Boise Watershed Advisory Group and contained in the Lower Boise River TMDL (IDEQ, 2000) find that flow alteration and habitat contribute to impairment of use in ALL reaches of the Boise River below Lucky Peak Dam. The LBR TMDL finds that:

"Sediment, temperature, flow, and habitat conditions contribute to the impairment of the cold water biota." (p.1, Executive Summary, LBR TMDL, IDEQ, 2000); "In addition, flow and habitat conditions impair aquatic life uses in the Boise River." (p 31, LBR TMDL, IDEQ 2000);

"Sediment, temperature, and flow and habitat conditions in the river all contribute to impairment of cold water biota and salmonid spawning." (p. 47, LBR TMDL, IDEQ 2000);

"Table 10: Status of Aquatic Life Uses in Lower Boise River Reach Other Causes of Impairment Boise River: Lucky Peak to BarberFlow Alteration, habitat modification (lack of cover, lack of gravels, channelization, embeddedness, and armored substrate)

Boise River: Barber to Star Same as above

Boise River: Star to Notus Same as above

Boise River: Notus to Mouth Same as above
(p. 47, LBR TMDL, IDEQ 2000);

"Many of man's activities in the lower Boise River watershed contribute to degradation of flow and habitat conditions. Flow manipulation for flood control, irrigation, impoundments, flood control activities such as clearing debris and construction of levees, gravel mining, unscreened diversions, angling pressure and barriers in the river all have adverse affects on habitat. It is DEQ's position that habitat modification and flow alteration, which may adversely affect beneficial uses, are not pollutants under Section 303(d) of the Clean Water Act. There are no water quality standards for habitat or flow, nor are they suitable for estimation of load capacity or load allocations. Because of these practical limitations, TMDLs will not be developed to address habitat modification or flow alteration." (p.48, LBR TMDL, IDEQ, 2000).

The City recommends that IDEQ list the Boise River from Diversion Dam to the Mouth for flow alteration and habitat in Section 4c based on the Tier 1 data and multiple lines of evidence described above.

2012 Integrated Report: Category 4c: Waters Impaired by Pollution

ID17050114SW005_06 Boise River - Veterans Memorial Parkway to Star Bridge

38.17 MILES

Physical substrate habitat alterations

Low flow alterations

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Flow and habitat assessments have been done on the lower Boise River by Idaho Fish and Game, Asbridge and Bjornn (1988), and USGS (1997). These studies, in addition to chemical, physical and biological data collected by USGS for the Lower Boise Watershed Advisory Group and contained in the Lower Boise River TMDL (IDEQ, 2000) find that flow alteration and habitat contribute to impairment of use in ALL reaches of the Boise River below Lucky Peak Dam. The LBR TMDL finds that:

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2012 Integrated Report: Category 4c: Waters Impaired by Pollution

ID17050114SW005_06a Boise River-Star to Middleton

11.34 MILES

Physical substrate habitat alterations

Low flow alterations

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Flow and habitat assessments have been done on the lower Boise River by Idaho Fish and Game, Asbridge and Bjornn (1988), and USGS (1997). These studies, in addition to chemical, physical and biological data collected by USGS for the Lower Boise Watershed Advisory Group and contained in the Lower Boise River TMDL (IDEQ, 2000) find that flow alteration and habitat contribute to impairment of use in ALL reaches of the Boise River below Lucky Peak Dam. The LBR TMDL finds that:

"Sediment, temperature, flow, and habitat conditions contribute to the impairment of the cold water biota." (p.1, Executive Summary, LBR TMDL, IDEQ, 2000); "In addition, flow and habitat conditions impair aquatic life uses in the Boise River." (p 31, LBR TMDL, IDEQ 2000);

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Boise River: Star to Notus Same as above

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(p. 47, LBR TMDL, IDEQ 2000);

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2012 Integrated Report: Category 4c: Waters Impaired by Pollution

ID17050114SW005_06b Boise River-Middleton to Indian Creek

7.88 MILES

Physical substrate habitat alterations

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Flow and habitat assessments have been done on the lower Boise River by Idaho Fish and Game, Asbridge and Bjornn (1988), and USGS (1997). These studies, in addition to chemical, physical and biological data collected by USGS for the Lower Boise Watershed Advisory Group and contained in the Lower Boise River TMDL (IDEQ, 2000) find that flow alteration and habitat contribute to impairment of use in ALL reaches of the Boise River below Lucky Peak Dam. The LBR TMDL finds that:

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The City recommends that IDEQ list the Boise River from Diversion Dam to the Mouth for flow alteration and habitat in Section 4c based on the Tier 1 data and multiple lines of evidence described above.

ID17050114SW010_02 Fivemile, Eightmile, and Ninemile Creeks - 1st and 2nd order

65 MILES

Low flow alterations

2012 Integrated Report: Category 4c: Waters Impaired by Pollution

ID17050114SW011a_06 Boise River - Diversion Dam to Veterans Memorial Parkway

22.54

MILES

Physical substrate habitat alterations

Low flow alterations

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Flow and habitat assessments have been done on the lower Boise River by Idaho Fish and Game, Asbridge and Bjornn (1988), and USGS (1997). These studies, in addition to chemical, physical and biological data collected by USGS for the Lower Boise Watershed Advisory Group and contained in the Lower Boise River TMDL (IDEQ, 2000) find that flow alteration and habitat contribute to impairment of use in ALL reaches of the Boise River below Lucky Peak Dam. The LBR TMDL finds that:

"Sediment, temperature, flow, and habitat conditions contribute to the impairment of the cold water biota." (p.1, Executive Summary, LBR TMDL, IDEQ, 2000); "In addition, flow and habitat conditions impair aquatic life uses in the Boise River." (p 31, LBR TMDL, IDEQ 2000);

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ID17050114SW011b_06 Boise River - Lucky Peak Dam to Diversion Dam

2.32

MILES

Low flow alterations

17050123

North Fork Payette

2012 Integrated Report: Category 4c: Waters Impaired by Pollution

ID17050123SW001_06	North Fork Payette River - Cascade to Smiths Ferry	23.23	MILES
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Low flow alterations

In the 2010 integrated report, CWAL and SS were listed as NFS, with an impairment caused by 'Temperature'. However, 'temperature' was (uniquely), identified as "not being a pollutant" (i.e. a 4C temperature listing, something incompatible with DEQ policies).

The reason for the designation was that the high water temperatures in the NF Payette River were caused by the operations of Cascade Reservoir.

DEQ contacted the Bureau of Reclamation (L. Freeman 3/15/12) to find out whether reservoir operations could be adjusted to provide cooler water into the river. We reviewed a summary of two alternate modelling scenarios:

1. Simulated selective withdrawal of bottom waters via removal of sediment deposits just upstream of the turbine trashrack degraded reservoir water quality. Sediment deposits in front of the turbine trashrack forces both turbine and spillway discharges to be withdrawn from the mixed surface layer. If the deposits were removed, modeling indicated that cold bottom waters would quickly be flushed out of the reservoir through the turbines and replaced with warmer water. The warmer water would increase decay of organics and anaerobic conditions. Water quality would be worse due to increased bottom temperature, even though more bottom waters would be flushed from the reservoir.

2. Simulated selective withdrawal of surface waters via increased spillway discharge of surface waters had minimal effect on reservoir water quality. Simulations that decreased the minimum pool resulted in more withdrawal from the surface, more flushing and turbulent mixing, and less volume with high DO and cold temperatures for trout refuge. These changes would result in release of supersaturated surface waters during spring, release of poor quality water during late spring and early summer due to flushing of the reservoir bottom water layers, and release of surface waters saturated with DO from algal photosynthesis during late summer and early autumn due to simulated earlier pool turnover

Furthermore, the North Fork Payette Subbasin Assessment and TMDL, page 67 (approved by EPA August 2005) says:

A determination of natural background temperature needs to be made for Cascade Reservoir, the main instream heat source, to properly evaluate whether the North Fork Payette River system is actually meeting temperature criteria. That evaluation was not within the scope of this TMDL. However, a TMDL is not necessary for the listed reach between Clear Creek and Smiths Ferry because shade targets are met in this reach. In other words, anthropogenic factors in this listed reach are not contributing to higher instream temperatures.

It is therefore concluded that the impairment of the NF Payette River is caused by 'low flow alterations', rather than temperature. HS 3/22/12

ID17050123SW001_06a	North Fork Payette River - Smiths Ferry to Banks	19.1	MILES
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Other flow regime alterations

From 2005 TMDL, page 57:

The North Fork Payette River is a hydrologically modified system with flow largely influenced by outflow from Cascade Dam and in the lower reach, inflow from the South Fork Payette River. Peak flow usually occurs in late May and June from both snowmelt runoff and release of water from Lake Cascade after the reservoir fills (Figures 21 and 22). The average annual runoff at Horseshoe Bend is about 2.35 million acre-feet of water per year. Base flow is usually in November. If the system were not hydrologically modified, base flows would probably occur in August. Prior to the reservoir filling, releases in winter and spring are generally around 200 cubic feet per second (cfs). The BOR informally operates Cascade and Deadwood to try and keep maximum flows below 12,000 cfs at the Horseshoe Bend gauge. During the summer months, flows are generally kept at between 2,100-2,600 cfs at the Horseshoe Bend gauge in order to meet the needs of downstream irrigators. Dam releases are from Cascade and Deadwood Reservoirs.

2012 Integrated Report: Category 4c: Waters Impaired by Pollution

ID17050123SW011_03	Boulder Creek - 3rd order (Louie Creek to mouth)	11.55	MILES
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Other flow regime alterations

ID17050123SW012_03	Lake Fork - Little Payette Lake to Cascade Reservoir	19.55	MILES
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Low flow alterations

17050201 **Brownlee Reservoir**

ID17050201SW007_03	Warm Springs Creek - 3rd order	5.3	MILES
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Low flow alterations