

Technical Memorandum BCWA



Date: February 2, 2017
To: Bear Creek Watershed Association
From: Russell N. Clayshulte, Manager

Re: BCWA TM 2015.06 MBCW 2015 Nutrient Summary

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The BCWA monitors a series of P3 stations located within the middle section of the Bear Creek Watershed. In 2016, samples were collected from May through October. The monitoring in 2016 focused on total nitrogen and total phosphorus pairs. The full data results are contained in the 2016 Bear Creek Master Spreadsheet. These P3 monitoring programs focus on characterizing water quality of surface waters in the Turkey Creek and Bear Creek drainages of the watershed. The monitoring plan is detailed in the *Bear Creek Sample Analysis Plan*, which is updated annually and posted on the Association website monitoring page. The BCWA collects limited flow data at monitoring sites to determine potential nutrient loading problem areas. The nutrient data shows areas along the mainstem of Bear Creek where elevated nutrients are commonly measured: the mainstem of Bear Creek between Golden Willow and the Keys on the green (Upper Bear Creek), downtown Evergreen, and below Idledale. Turkey Creek also had elevated nutrient loading in 2016. The Tributaries with elevated nutrient loading are Yankee Creek (Upper Bear Creek), Troublesome drainage, Cub Creek drainage and Mt. Vernon drainage.

Table 1 MBCW Seasonal Nutrient Averages

Site ID	Site Location by Stream Segment	5/16/2016		6/10/2016		7/7/2016		8/23/2016		9/20/2016		10/18/2016		Seasonal Average	
		TN Ug/l	T Phos Ug/l	TN Ug/l	T Phos Ug/l	TN Ug/l	T Phos Ug/l	TN Ug/l	T Phos Ug/l	TN Ug/l	T Phos Ug/l	TN Ug/l	T Phos Ug/l	TN Ug/l	T Phos Ug/l
Site 58	Bear Creek above Singing River Ranch	233	34	253	11	302	31	197	4	180	5	109	25	212	18
Site 2a	Golden Willow Road UBC	223	29	210	20	202	9	131	6	118	8	108	83	165	26
Site 3a	Above Evergreen Lake at CDOW Site	262	30	221	28	266	10	137	9	123	12	102	85	185	29
Site 25	Vance Creek (Mt. Evans Wilderness drainage)	162	24	132	23	146	15	100	4	91	6	210	92	140	27
Site 89	Yankee Creek, Mouth			180	32	245	32	185	57	140	55	97	133	169	62
Site 5	Above EMD WWTP, CDOW downtown site	340	37	237	19	334	21	205	16	205	20	248	102	262	36
Site 8a	Bear Creek Cabins at CDOW Site	442	39	278	21	391	19	526	24	569	32	453	35	443	28
Site 9	O'Fallon Park, west end at CDOW Site	501	40	329	25	442	23	437	22	421	23	334	60	411	32
Site 12	Lair o' the Bear Park, at CDOW site	526	40	248	27	547	23	551	30	558	32	729	94	527	41
Site 13a	Below Idledale, Shady Lane at CDOW site	504	51	400	34	512	26	663	27	627	30	566	75	545	41

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		TN Ug/l	T Phos Ug/l	TN Ug/l	T Phos Ug/l	TN Ug/l	T Phos Ug/l	TN Ug/l	T Phos Ug/l	TN Ug/l	T Phos Ug/l	TN Ug/l	T Phos Ug/l	TN Ug/l	T Phos Ug/l
Site 14a	Morrison Park west, CDOW Site	523	42	344	31	545	21	520	23	498	24	492	91	487	39
Site 87	Mt Vernon Drainage, Morrison	2,152	58	1875	42	1820	30	1547	17	1526	17	1395	14	1,719	30
Site 88	Cub Creek, Upstream	473	113	266	15	757	28	976	26	976	28	1296	133	791	57
Site 50	Cub Creek, Upstream of Cub Creek Park	644	65	278	34	460	22	251	54	171	35	135	50	323	43
Site 64	Troublesome at Culvert above West Jeff	579	49	547	44	794	60	622	25	627	31	669	87	640	49
site 32	Troublesome Mouth	1739	93	1534	90	1623	98	1356	109	1371	118	728	75	1,392	97
Site 18	South Turkey Creek Aspen Park	763	107	812	90	770	35	581	65	572	69	335	97	639	77
Site 19	North Turkey Creek Flying J Ranch Bridge	681	103	422	52	476	16	260	26	248	29	130	68	370	49

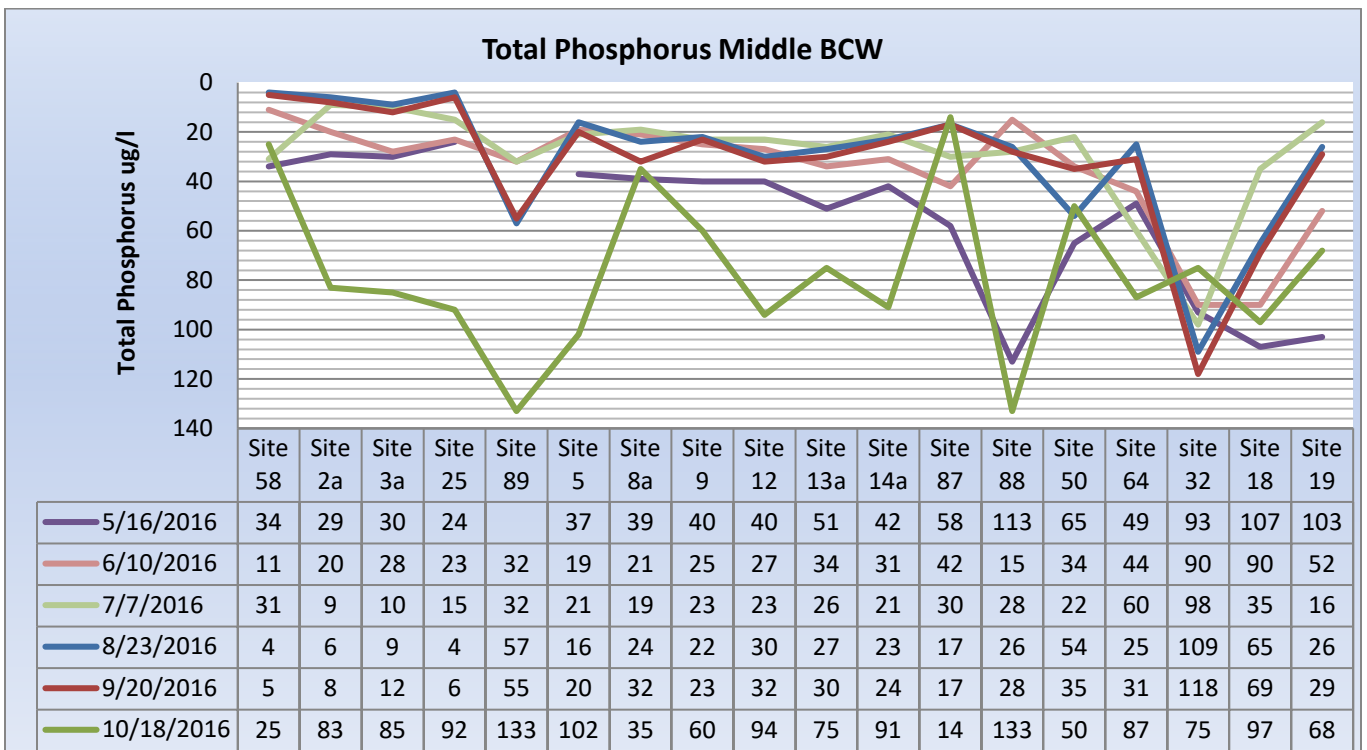


Figure 1 MBCW Total Phosphorus

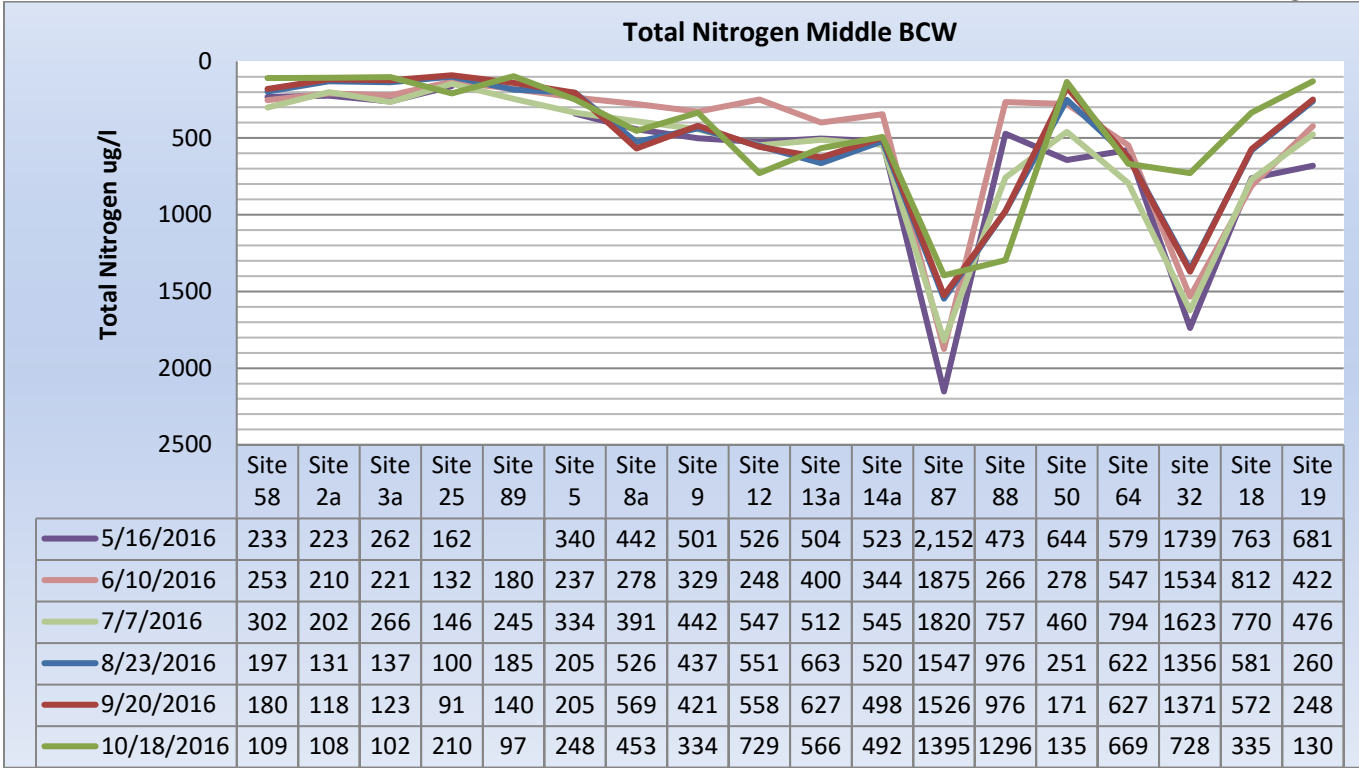


Figure 2 MBCW Total Nitrogen