

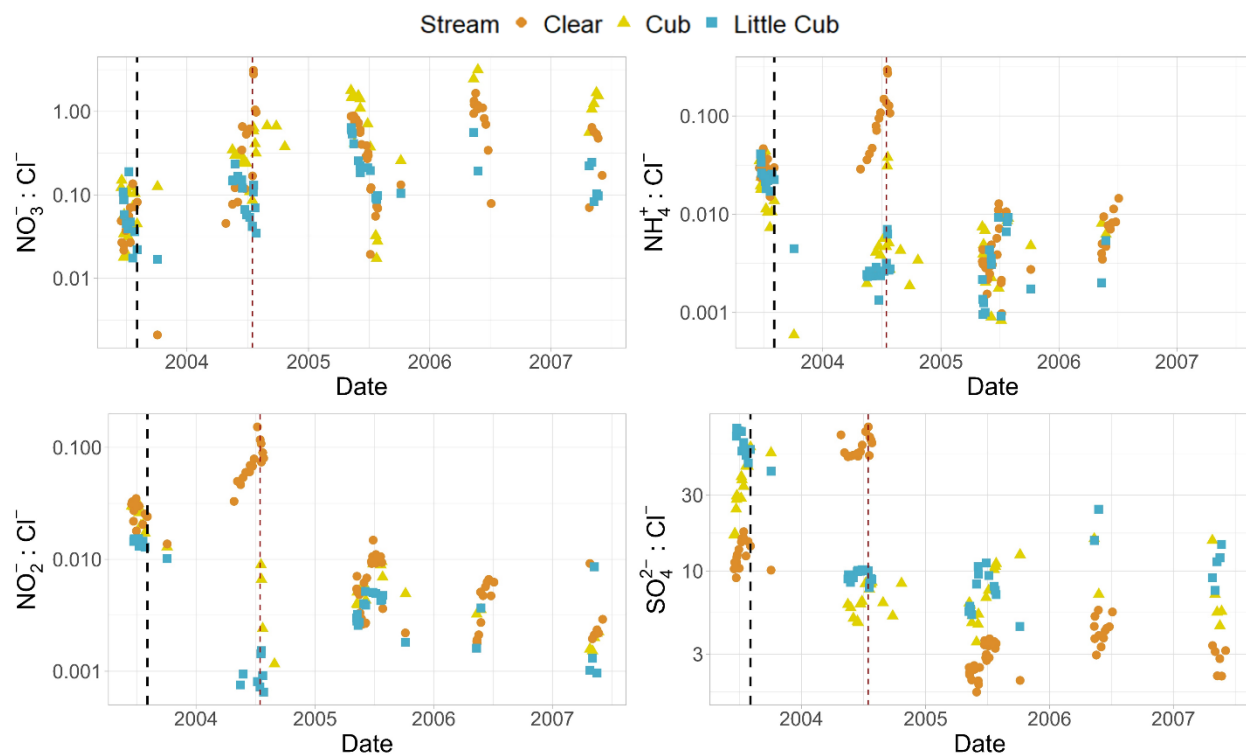
Yellowstone wildfires increased stream ion concentrations and export: nitrogen's response varied by form

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Supplementary Material

Supplementary Table S1. Mean ion concentrations (μg N, S, P, or Cl/L) with standard deviation in three streams prior to wildfire in 2003 and post-wildfire in 2004 to 2007.

		Pre-fire	Post-fire			
		2003	2004	2005	2006	2007
NH ₄ ⁺	Clear Creek	1.83 ± 0.32	3.24 ± 2.88	2.20 ± 0.99	2.53 ± 0.637	-
	Cub Creek	1.12 ± 0.48	7.22 ± 12.5	3.27 ± 2.09	2.60 ± 0.566	-
	Little Cub Creek	2.80 ± 0.73	5.20 ± 2.87	4.33 ± 3.15	2.95 ± 2.05	-
NO ₃ ⁻	Clear Creek	3.88 ± 2.96	21.7 ± 34.1	278 ± 257	390 ± 230	217 ± 141
	Cub Creek	4.65 ± 3.25	318 ± 230	739 ± 638	1010 ± 141	677 ± 183
	Little Cub Creek	7.32 ± 6.39	192 ± 140	429 ± 377	288 ± 185	149 ± 92.2
NO ₂ ⁻	Clear Creek	1.62 ± 0.06	2.09 ± 0.46	3.20 ± 1.02	1.39 ± 0.411	2.05 ± 2.26
	Cub Creek	1.59 ± 0.05	4.60 ± 4.66	4.06 ± 0.542	1.22 ± 0.03	1.07 ± 0.034
	Little Cub Creek	1.60 ± 0.09	1.68 ± 0.577	4.49 ± 0.538	2.10 ± 1.27	2.67 ± 3.11
TDN	Clear Creek	123 ± 45.4	178 ± 79.2	515 ± 300	527 ± 249	-
	Cub Creek	103 ± 18.6	439 ± 263	828 ± 615	1090 ± 135	-
	Little Cub Creek	255 ± 36.5	451 ± 157	675 ± 366	588 ± 122	-
DON	Clear Creek	116 ± 46.9	153 ± 67.2	141 ± 33.7	134 ± 23.9	-
	Cub Creek	95.0 ± 18.5	127 ± 75.7	88.9 ± 39.7	79.9 ± 5.60	-
	Little Cub Creek	243 ± 30.9	253 ± 93.0	238 ± 43.5	295 ± 59.7	-
PON	Clear Creek	11.7 ± 4.15	30.7 ± 52.7	33.7 ± 30.0	-	-
	Cub Creek	10.5 ± 1.82	55.1 ± 141	96.4 ± 142	-	-
	Little Cub Creek	11.1 ± 1.19	71.8 ± 149	53.6 ± 31.2	-	-
SO ₄ ²⁻	Clear Creek	782 ± 160	1830 ± 662	1380 ± 362	1660 ± 698	1530 ± 569
	Cub Creek	2190 ± 1210	5910 ± 1700	4910 ± 1740	4210 ± 2410	4630 ± 3250
	Little Cub Creek	7250 ± 682	15900 ± 3160	8940 ± 776	15800 ± 5880	10300 ± 1790
Cl ⁻	Clear Creek	60.0 ± 12.2	37.1 ± 26.5	530 ± 184	382 ± 123	537 ± 131
	Cub Creek	61.8 ± 14.4	827 ± 278	731 ± 250	361 ± 13.6	577 ± 96.2
	Little Cub Creek	112 ± 10.2	1670 ± 468	1290 ± 405	781 ± 48.9	953 ± 105
TDP	Clear Creek	5.33 ± 3.82	8.07 ± 7.28	11.6 ± 6.68	12.7 ± 4.32	-
	Cub Creek	3.92 ± 2.14	12.0 ± 13.1	14.1 ± 7.15	26.4 ± 18.9	-
	Little Cub Creek	11.4 ± 3.23	29.1 ± 29.7	25.5 ± 12.5	32.4 ± 7.14	-



Supplementary Figure S1. (a) nitrate, (b) ammonium, (c) nitrite, and (d) sulfate to chloride ratios before and after wildfire. The black dotted line denotes when the fires started burning and the red dotted line denotes a large precipitation event that caused a mudslide in 2004. Streams are differentiated by colors and shapes, and each point is an individual measurement.