

Supplementary materials

Table S1: USGS gage observations (O-) used for validation of suspended sediment flux (Qs) and discharge (Q)

ID	USGS site #	Lat	Lon	Area (km ²)	USGS O-Qs time period	USGS O-Qs (kg/s)	USGS O-Q (m ³ /s)	Remote sensing Qs (kg/s)	NHDplus Q (m ³ /s)
1	01357500	42.79	-73.71	8,935	2003-2018	15.05	179.84	3.99	171.91
2	06486000	42.49	-96.41	814,811	1992-2019	257.31	909.59	40.53	1066.60
3	06610000	41.26	-95.92	836,049	1992-2019	476.65	1056.64	65.95	1065.09
4	06807000	40.68	-95.85	1,061,896	1992-2019	736.73	1259.21	118.54	1262.72
5	01331095	42.94	-73.65	9,772	1992-2001	2.61	198.59	2.05	183.99
6	05587455	38.95	-90.37	443,665	1990-2016	690.98	3665.79	204.44	3681.30
7	12340500	46.88	-113.93	15,594	1989-2016	3.65	79.48	1.14	83.65
8	07020500	37.90	-89.83	1,835,267	1988-2016	2659.89	6810.37	638.16	6483.72
9	04193500	41.50	-83.71	16,395	1988-2003	36.70	171.62	11.46	157.98
10	02489500	30.79	-89.82	17,024	1986-1993	39.20	284.70	15.35	330.61
11	05474000	40.75	-91.28	11,168	1985-2019	64.06	100.35	7.37	90.94
12	06452000	43.75	-99.56	25,680	1985-2019	111.70	21.61	3.08	17.83
13	05465500	41.18	-91.18	32,375	1985-2019	74.09	313.70	12.19	282.50
14	11303500	37.68	-121.27	35,066	1985-2019	7.79	108.86	3.68	134.60
15	08330000	35.09	-106.68	45,169	1985-2019	28.16	33.52	7.76	39.21
16	08332010	34.42	-106.80	49,806	1985-2019	24.67	28.87	5.86	27.66
17	08354900	34.26	-106.89	69,334	1985-2019	81.17	29.15	5.99	26.07
18	08358400	33.68	-107.00	71,743	1985-2019	71.14	22.33	9.30	24.72
19	11447650	38.46	-121.50	nan	1985-2019	41.72	587.21	15.39	749.23
20	05325000	44.17	-94.00	38,591	1985-2017	46.22	186.17	5.35	141.84
21	07010000	38.63	-90.18	1,805,223	1985-2017	2642.23	6522.81	572.56	6194.66
22	07022000	37.22	-89.46	1,847,181	1985-2017	2557.32	7081.22	658.07	6699.36
23	05586100	39.70	-90.65	69,264	1985-2011	170.20	740.62	39.04	722.86
24	05481650	41.68	-93.67	15,128	1985-2004	5.63	114.59	2.24	110.19
25	04198000	41.31	-83.16	3,240	1985-2002	7.62	36.61	2.44	33.25
26	05288500	45.13	-93.30	49,469	1985-1996	7.84	284.49	4.21	272.13
27	02116500	35.86	-80.39	5,905	1985-1994	20.40	82.78	4.81	91.75
28	09364500	36.72	-108.20	3,522	1985-1993	13.19	22.66	1.63	25.67
29	09217000	41.52	-109.45	36,260	1985-1992	3.16	41.63	1.28	53.22
30	01638500	39.27	-77.54	24,996	1985-1991	35.13	286.29	7.15	301.42
31	06115200	47.63	-108.69	105,281	1985-1991	138.49	231.88	23.02	268.70
32	06329500	47.68	-104.16	178,966	1985-1991	206.37	320.78	54.76	353.50

33	01567000	40.48	-77.13	8,687	1985-1990	2.83	127.17	2.63	130.88
34	05454500	41.66	-91.54	8,472	1985-1987	8.45	79.30	2.06	71.13
35	09368000	36.78	-108.68	33,411	1985-1986	108.66	47.48	4.61	61.73
36	12334550	46.83	-113.81	9,472	1986-2016	1.61	37.22	0.85	40.15

5