

Table 2. Field data and model comparison.

Name	Ref.	Num	Depth	O2	Rain	Mn2+		Fe2+		NH4		OrgC		MnO2 8 cm		MnO2 0 cm		ZNO3	
						model	data	model	data	model	data	model	data	model	data	model	data	model	data
BS1	1	1	52	211	800	0.1	13	0	1	444.9	51	2.6	2	15.4	110	29.6	440	0.3	n.d.
BS2	1	2	62	213	205	259.7	11	85.3	1	27.9	80	1.8	2	398.8	154	2193	2640	0.8	n.d.
BS3	1	3	77	75	100	115.1	19	27.7	9	12.3	50	1.9	2	1564	242	3170	484	0.7	n.d.
BS4	1	4	130	5	50	0	2	11.2	0	23.6	105	3.1	2	181.7	110	193.7	660	0.1	n.d.
BS5	1	5	181	0	25	0	n.d.	0	n.d.	31.8	100	3.5	3	192.7	60	167.6	60	0	n.d.
BS6	1	6	396	0	40	0	n.d.	0	n.d.	85.9	130	4.1	3	144.8	60	126.7	60	0	n.d.
BS7	1	7	1176	0	50	0	n.d.	0	n.d.	149.5	200	4.3	5	126.8	60	111.5	60	0	n.d.
BS8	1	8	2045	0	50	0	n.d.	0	n.d.	164.9	n.d.	4.8	5	94.2	60	81.5	60	0	n.d.
CM-CD	2	9	1443	37	28	8.6	5	2.5	n.d.	0.4	16	1.7	2.4	599.6	n.d.	783.7	n.d.	1.9	1.1
CM-CG	2	10	3320	120	64	19.6	5	4.9	40	2.1	75	1.5	2.6	908.7	n.d.	1238	n.d.	1.7	1.7
CM-CK	2	11	1000	20	37	5.9	12	1.2	1	0.4	9	1.3	0.4	673.7	n.d.	803.7	n.d.	2.7	0.5
CM-CL	2	12	1880	72	43	15	3	4	5	1.1	5	1.7	1.5	845	n.d.	1120	n.d.	1.7	1.5
CM-CM	2	13	3720	129	63	10.4	8	2.6	10	1.6	35	1.2	2.7	808.4	n.d.	1032	n.d.	1.9	2
CM-NMd	1,10	14	3111	100	17	0.3	n.d.	0.1	n.d.	0	n.d.	0.4	1.4	750.3	n.d.	708	n.d.	6.4	5
CM-NNs	1,10	15	2712	80	38	5	n.d.	1.2	n.d.	0.5	n.d.	1.1	2	707.9	n.d.	823.4	n.d.	2.3	1
DS4	3	16	190	231	905	69.3	30	154.8	140	451.9	200	1.7	4	211.6	110	2109	330	0.3	0.5
DS6	3	17	380	231	673	459	20	127.2	80	197	175	1.6	4	1600	110	8153	330	0.4	1
DS9	3	18	695	248	566	57.3	400	13.3	0	46.9	80	0.8	4	1922	200	2941	16500	1.5	1
J10BC	4	19	5036	250	18	0	0	0	n.d.	0	1	0.1	n.d.	675.6	n.d.	623.1	n.d.	100	100
J12BC	4	20	3860	240	22	0.1	0	0	n.d.	0	4	0.2	0.3	466.4	n.d.	439.6	n.d.	13.5	100
J13BC	4	21	4900	225	14	0	0	0	n.d.	0	1	0.1	0.5	712	n.d.	651	n.d.	100	100
J14BC	4	22	5100	250	11	0	0	0	n.d.	0	1	0.1	n.d.	780.3	n.d.	708.9	n.d.	100	100
J15BC	4	23	5360	250	11	0	0	0	n.d.	0	2	0.1	n.d.	800.4	n.d.	726	n.d.	100	100
J1BC	4	24	1445	240	64	20.6	6	5.7	36	0.8	41	0.8	3.3	330.7	150	438.6	320	2.9	3.5
J2BC	4	25	3000	200	30	0.7	13	0.1	n.d.	0	n.d.	0.3	0.3	431.3	780	426	1240	6.3	7.5
J3BC	4	26	2981	230	38	1.1	23	0.2	25	0.1	30	0.4	n.d.	457.3	250	458.7	1270	5.3	4.5
J4BC	4	27	1006	140	33	1.6	5	0.3	32	0.1	9	0.5	0.7	396.8	n.d.	416.1	n.d.	4.3	6
J6BC	4	28	4400	240	22	0.1	0	0	2	0	1	0.2	0.6	548.4	n.d.	514.4	n.d.	13.4	100
J7BC	4	29	4600	250	20	0	0	0	n.d.	0	4	0.1	n.d.	589.6	n.d.	550.1	n.d.	21.6	100
J8BC	4	30	2760	240	28	0.4	0	0	n.d.	0	2	0.3	0.3	409.6	n.d.	396.1	n.d.	8.5	100
Maine1	5	31	47	300	433	24.4	75	5.4	n.d.	16.4	110	0.5	1	1028	n.d.	1294	n.d.	2.8	1
Maine4	5	32	158	240	433	50.1	40	11.5	n.d.	29.6	80	0.8	1	1482	n.d.	2302	n.d.	1.6	5
Maine5	5	33	185	200	433	212.9	25	50.3	5	89.2	100	1.6	1	3014	n.d.	6798	n.d.	0.4	0.5

Table 2 continued. Field data and model comparison.

Name	Ref.	Num	Depth	O2	Rain	Mn2+		Fe2+		NH4		OrgC		MnO2 (8 cm)		MnO2 (surface)		ZNO3	
						model	data	model	data	model	data	model	data	model	data	model	data	model	data
Maine7	5	34	290	180	433	248.8	160	58.6	n.d.	97.4	60	1.6	1	3086	n.d.	7374	n.d.	0.4	9
Maine9	5	35	250	200	433	206.3	25	48.9	2	87.4	50	1.5	1	2944	n.d.	6614	n.d.	0.5	0.5
ManopC	6	36	4450	167	20	0.3	4	0	n.d.	0	1	0.3	0.2	689.1	n.d.	650.3	n.d.	8.4	100
ManopM	6	37	3100	110	15	0.2	12	0	0	0	1	0.3	1.3	343.8	n.d.	327.3	n.d.	8.8	15
ManopS	6	38	4925	167	2	0	1	0	n.d.	0	1	0.1	0.6	832.4	n.d.	778.6	n.d.	100	100
NEP-2	7	39	3570	140	36	1.9	10	0.4	n.d.	0.2	n.d.	0.7	2	610.4	n.d.	633.2	n.d.	3.6	100
NEP-3	7	40	4211	154	33	1.2	8	0.3	n.d.	0.1	n.d.	0.5	0.8	649	n.d.	647.6	n.d.	4.3	18
NEP-4	7	41	4772	155	8	0	0	0	n.d.	0	n.d.	0.1	0.3	823.6	n.d.	752.1	n.d.	100	100
NEP-5	7	42	4980	158	5	0	0	0	n.d.	0	n.d.	0.1	0.2	828.4	n.d.	763.9	n.d.	100	100
NEP-6	7	43	5668	164	2	0	0	0	n.d.	0	n.d.	0.1	0.1	829.3	n.d.	779.4	n.d.	100	100
OMEXB	7	44	500	208	64	15	n.d.	3.7	n.d.	0.9	10	0.8	0.4	362.3	n.d.	472.9	n.d.	2.7	100
PEsc	8	45	3500	140	80	18.4	55	4.2	5	3	n.d.	1.3	1.2	863.2	989	1199	11425	1.6	4
SCB	8	46	1800	60	80	46.9	20	11.1	10	6.9	n.d.	1.9	3	1412	494	2505	6482	0.9	2
SCruz	8	47	2000	10	80	0	6	0.6	30	64.1	n.d.	5	5	284.4	385	264.5	3955	0.1	0.5
SMB	8	48	2000	5	80	0	5	15.8	150	5.6	n.d.	2.9	5	305.6	373	267.2	216	1.5	0.5
StNick	8	49	2000	35	80	81.6	30	21.7	5	9.7	n.d.	2.4	5	206.6	439	4324	28289	0.8	0.5
WEC203	9	50	1994	56	59	16.4	9	3.7	10	2.4	60	1.5	2.4	950.1	390	1397	1030	1.4	4
WEC204	9	51	110	104	246	192	8	77.7	2	75.7	63	1.8	1.5	172.4	390	3526	370	0.4	0.6
WEC206	9	52	1025	38	33	3.2	5	0.6	1	0.4	5	1	1.6	719.8	370	785.6	510	2.2	1
WEC213	9	53	620	39	48	19.5	45	4.7	5	1.8	40	1.9	2.1	990.9	360	1505	400	1.4	1.5

Units for Mn2+, Fe2+, and NH4+ are  $\mu\text{M}$ , OrgC is % dry weight, MnO2 is ppm, and zNO3 is nitrate penetration depth in cm.

n.d. stands for no data.

References:

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