

Table S1. Site location, subplot code, and GPS coordinates for each sampling plot. W8 = Winston 8 Land and Cattle Tree Farm; ANF = Angelina National Forest; DCNF = Davy Crockett National Forest.

Site Location	Sub-Plot Code	Latitude	Longitude
DCNF	19	31.557650	-95.164706
DCNF	19-2	31.557674	-95.165070
ANF	66.01	31.143155	-94.337276
ANF	66.01-2	31.142935	-94.337451
ANF	66.02	31.143159	-94.338407
ANF	66.02-2	31.143163	-94.338073
ANF	67.02	31.146366	-94.350587
ANF	67.02-2	31.146049	-94.350452
W8	W01	31.510600	-94.719893
W8	W01-1	31.510487	-94.720059
W8	W02	31.508886	-94.719574
W8	W02-1	31.508764	-94.719721
W8	W03	31.506644	-94.719835
W8	W03-1	31.506842	-94.719789
W8	W04	31.501833	-94.720773
W8	W04-1	31.501936	-94.720595
W8	W05.1	31.499962	-94.720910
W8	W05.1-1	31.500002	-94.721071
W8	W5	31.507570	-94.719086
W8	W5-1	31.507749	-94.719333
W8	W7	31.510930	-94.717413
W8	W7-1	31.513396	-94.717528
W8	W8	31.508660	-94.717010
W8	W8-1	31.508419	-94.717083
W8	W11	31.509117	-94.710175
W8	W11-1	31.509008	-94.710245
W8	W12	31.508924	-94.709120
W8	W12-1	31.508819	-94.708880
W8	W13	31.510535	-94.710096
W8	W13-1	31.510437	-94.709962
W8	W14	31.511139	-94.709232
W8	W14-1	31.510971	-94.709108
W8	W15	31.510659	-94.707995
W8	W15-1	31.510727	-94.708101
W8	W16	31.508251	-94.710421
W8	W16-1	31.508113	-94.710509
W8	W17	31.506903	-94.710493
W8	W17-1	31.506788	-94.710293

Table S2. Soil map unit and upper 15 cm soil texture associated with each subplot. W8 = Winston 8 Land and Cattle Tree Farm; ANF = Angelina National Forest; DCNF =Davy Crockett National Forest. NRCS reported soil water infiltration rates measured in cm min⁻¹. NRCSIR = Natural Resource Conservation Service Infiltration Rates.

Location	Sub-plot	Map Unit	Soil Texture	Soil Series Description	NRCSIR
DCNF	19.01	Darco	Sand	Loamy, siliceous, semiactive, thermic Grossarenic Paleudults	0.55
DCNF	19.01-2	Darco	Sand	Loamy, siliceous, semiactive, thermic Grossarenic Paleudults	0.55
ANF	66.01	Alazan	Loamy Sand	Fine-loamy, siliceous, semiactive, thermic Aquic Glossudalfs	0.17
ANF	66.01-2	Alazan	Sand	Fine-loamy, siliceous, semiactive, thermic Aquic Glossudalfs	0.17
ANF	66.02	Alazan	Loamy Sand	Fine-loamy, siliceous, semiactive, thermic Aquic Glossudalfs	0.17
ANF	66.02-2	Alazan	Sand	Fine-loamy, siliceous, semiactive, thermic Aquic Glossudalfs	0.17
ANF	67.02	Moswell	Loamy Sand	Very-fine, smectitic, thermic Vertic Hapludalfs	0.05
ANF	67.02-2	Moswell	Sand	Very-fine, smectitic, thermic Vertic Hapludalfs	0.05
W8	W01	Kirvin	Sand	Fine, mixed, semiactive, thermic Typic Hapludults	0.17
W8	W01-1	Kirvin	Sand	Fine, mixed, semiactive, thermic Typic Hapludults	0.17
W8	W02	Bowie	Sand	Fine-loamy, siliceous, semiactive, thermic Plinthic Paleudults	0.17
W8	W02-1	Bowie	Sand	Fine-loamy, siliceous, semiactive, thermic Plinthic Paleudults	0.17
W8	W03	Bowie	Sand	Fine-loamy, siliceous, semiactive, thermic Plinthic Paleudults	0.17
W8	W03-1	Bowie	loamy Sand	Fine-loamy, siliceous, semiactive, thermic Plinthic	0.17

				Paleudults	
W8	W04	Kirvin	Sand	Fine, mixed, semiactive, thermic Typic Hapludults	0.17
W8	W04-1	Kirvin	Sand	Fine, mixed, semiactive, thermic Typic Hapludults	0.17
W8	W05.1	Bernaldo	Sand	Fine-loamy, siliceous, semiactive, thermic Glossic Paleudalfs	0.17
W8	W05.1-1	Bernaldo	Sand	Fine-loamy, siliceous, semiactive, thermic Glossic Paleudalfs	0.17
W8	W5	Bowie	Loamy Sand	Fine-loamy, siliceous, semiactive, thermic Plinthic Paleudults	0.17
W8	W5-1	Bowie	Loamy Sand	Fine-loamy, siliceous, semiactive, thermic Plinthic Paleudults	0.17
W8	W7	Culthbert	Sand	Fine, mixed, semiactive, thermic Typic Hapludults	0.17
W8	W7-1	Culthbert	Sand	Fine, mixed, semiactive, thermic Typic Hapludults	0.17
W8	W8	Bernaldo	Sand	Fine-loamy, siliceous, semiactive, thermic Glossic Paleudalfs	0.17
W8	W8-1	Bernaldo	Loamy Sand	Fine-loamy, siliceous, semiactive, thermic Glossic Paleudalfs	0.17
W8	W11	Darco	Loamy Sand	Loamy, siliceous, semiactive, thermic Grossarenic Paleudults	0.55
W8	W11-1	Bowie	Loamy Sand	Fine-loamy, siliceous, semiactive, thermic Plinthic Paleudults	0.17
W8	W12	Tenaha	Sand	Loamy, siliceous, semiactive, thermic Arenic Hap- ludults	0.55
W8	W12-1	Tenaha	Sand	Loamy, siliceous, semiactive, thermic Arenic Hap- ludults	0.55
W8	W13	Tenaha	Sand	Loamy, siliceous, semiactive, thermic Arenic Hap- ludults	0.55

W8	W13-1	Tenaha	Sand	Loamy, siliceous, semiactive, thermic Arenic Hapludults	0.55
W8	W14	Tenaha	Sand	Loamy, siliceous, semiactive, thermic Arenic Hapludults	0.55
W8	W14-1	Darco	Sand	Loamy, siliceous, semiactive, thermic Grossarenic Paleudults	0.55
W8	W15	Tenaha	Sand	Loamy, siliceous, semiactive, thermic Arenic Hapludults	0.55
W8	W15-1	Tenaha	Sand	Loamy, siliceous, semiactive, thermic Arenic Hapludults	0.55
W8	W16	Darco	Sand	Loamy, siliceous, semiactive, thermic Grossarenic Paleudults	0.55
W8	W16-1	Darco	Loamy Sand	Loamy, siliceous, semiactive, thermic Grossarenic Paleudults	0.55
W8	W17	Tenaha	Sand	Loamy, siliceous, semiactive, thermic Arenic Hapludults	0.55
W8	W17-1	Tenaha	Sand	Loamy, siliceous, semiactive, thermic Arenic Hapludult	0.55

Table S3. Soil water infiltration rates (cm min^{-1}) at the three time frames and with means.

Location	Sub-Plot	Pre-Burn	Post-Burn	Green-Up	Mean Infiltration
DCNF	19.01	3.17	3.33	4.00	3.50
DCNF	19.01-2	3.33	4.50	5.67	4.50
ANF	66.01	0.43	0.60	0.75	0.59
ANF	66.01-2	1.00	0.80	0.69	0.83
ANF	66.02	1.60	3.50	3.50	2.87
ANF	66.02-2	1.50	1.83	0.75	1.36
ANF	67.02	3.00	1.40	1.63	2.01
ANF	67.02-2	1.70	7.00	2.50	3.73
W8	W01	0.93	2.17	1.63	1.57
W8	W01-1	0.79	1.30	1.63	1.24
W8	W02	3.00	0.55	1.50	1.68
W8	W02-1	1.38	1.10	1.20	1.23
W8	W03	0.65	0.60	1.38	0.88
W8	W03-1	1.20	0.60	1.50	1.10
W8	W04	1.60	0.60	0.86	1.02
W8	W04-1	1.10	1.10	1.25	1.15
W8	W05.1	3.00	0.65	1.75	1.80
W8	W05.1-1	1.30	0.65	1.50	1.15
W8	W5	0.34	1.00	1.50	0.95
W8	W5-1	0.75	1.30	1.83	1.29
W8	W7	3.00	5.00	2.20	3.40
W8	W7-1	1.40	0.39	1.83	1.21
W8	W8	0.55	0.69	1.83	1.02
W8	W8-1	1.50	2.75	2.17	2.14
W8	W11	2.00	1.67	2.75	2.14
W8	W11-1	2.80	3.00	1.83	2.54
W8	W12	2.33	6.00	8.00	5.44
W8	W12-1	1.38	2.75	13.00	5.71
W8	W13	2.33	2.75	1.75	2.28
W8	W13-1	1.63	6.50	2.50	3.54
W8	W14	5.25	4.50	7.50	5.75
W8	W14-1	2.67	8.00	6.00	5.56
W8	W15	2.60	2.75	2.75	2.70
W8	W15-1	1.50	2.75	7.50	3.92
W8	W16	2.00	3.00	3.75	2.92
W8	W16-1	3.25	7.00	2.75	4.33
W8	W17	2.17	3.00	3.50	2.89
W8	W17-1	2.17	3.00	2.50	2.56
Mean	Rate		1.90	2.63	2.92

Table S4. Soil bulk density (Mg m^{-3}), Particle density (Mg m^{-3}), Particle Volume (ml^3), and Pore space percentage (%) for each subplot and each time frame. Pre= Pre-burn; Post= Post burn; G = Green-up.

Subplot	Bulk Density (Mg m ⁻³)			Particle density (Mg m ⁻³)			Particle volume (ml ³)			Pore Space (%)		
	Pre	Post	G	Pre	Post	G	Pre	Post	G	Pre	Post	G
66.01	1.19	0.87	0.99	2.20	1.97	2.47	270	220	80	46.0	56.0	60.0
66.01-2	1.19	1.64	1.59	2.15	2.09	1.99	240	340	200	44.7	21.7	20.0
66.02	1.07	1.32	1.73	2.06	2.07	2.06	260	320	210	48.0	36.0	16.0
66.02-2	1.98	1.32	1.41	2.16	1.96	1.82	340	250	170	8.1	32.4	22.7
67.02-1	1.55	1.48	1.33	2.20	2.04	2.22	290	300	150	29.6	27.2	40.0
67.02-2	0.95	1.21	0.93	1.96	1.95	1.93	210	270	120	51.6	37.8	52.0
19.01	1.41	0.86	1.00	2.52	2.20	2.51	260	240	200	43.9	60.7	60.0
19.01-2	1.37	1.05	1.30	2.48	2.31	2.13	210	340	270	44.7	54.7	39.2
W01	1.36	1.59	1.06	2.32	2.34	2.05	200	340	340	41.2	32.0	48.0
W01-1	1.59	1.80	1.05	2.41	2.16	2.40	330	350	260	34.0	16.7	56.5
W02	1.25	1.27	0.88	2.12	2.24	1.95	260	240	180	41.2	43.1	55.0
W02-1	1.42	1.40	1.11	2.26	2.37	1.80	240	260	210	37.2	40.9	38.2
W03	1.42	0.91	1.19	2.39	1.42	2.24	250	320	260	40.5	36.0	46.7
W03-1	1.31	1.47	1.11	2.24	2.17	2.16	210	340	280	41.7	32.0	48.7
W04	1.08	1.01	1.15	2.17	1.97	2.41	220	240	240	50.0	48.9	52.0
W04-1	1.15	1.41	1.06	1.97	2.34	2.23	320	300	320	41.8	40.0	52.2
W05.1	1.48	1.31	1.05	2.17	2.11	2.21	260	310	300	31.6	38.0	52.5
W05.1-1	1.47	1.04	1.03	2.11	2.25	2.19	320	300	220	30.4	53.7	52.8
W5	1.56	1.67	1.27	2.30	2.26	2.10	240	370	270	32.2	26.0	39.6
W5-1	1.36	1.15	1.53	2.13	2.20	2.47	320	340	280	36.0	47.7	38.1
W7	1.25	0.95	1.22	2.13	2.11	2.20	230	180	210	41.3	54.8	44.7
W7-1	1.54	1.75	1.66	2.37	2.31	2.43	200	280	220	35.1	24.3	31.7
W8	1.25	1.45	0.90	2.21	2.19	1.95	260	380	200	43.5	33.8	53.9
W8-1	1.19	0.89	1.15	2.06	2.10	1.88	260	190	290	42.2	57.8	38.8
W11	1.36	1.34	1.14	2.27	2.19	1.84	300	280	260	40.0	38.9	38.4
W11-1	1.20	1.50	1.30	2.28	2.01	2.17	260	300	300	47.5	25.4	40.0
W12	1.13	1.43	0.82	2.18	2.08	0.87	260	280	200	48.0	31.0	4.76
W12-1	1.34	1.58	0.95		2.58	2.30	200	280	70	41.5	38.9	58.8
				2.29								
W13	1.36	1.35	1.08	1.76	2.25	2.25	300	300	120	22.7	40.0	52.0
W13-1	1.25	1.16	0.90	2.10	1.58	2.05	220	360	110	40.5	26.5	56.0
W14	1.15	1.18	1.05	2.04	1.48	2.38	220	400	220	43.6	20.0	56.0
W14-1	1.05	1.07	1.89	2.05	2.42	2.31	190	210	360	48.9	55.5	18.2
W15	1.17	1.34	1.47		2.40	2.22	200	280	300	51.5	44.0	33.9
				2.41								
W15-1	1.21	1.48	1.10	1.90	2.17	1.82	160	340	200	36.0	32.0	39.4
W16	1.27	1.40	1.25	2.26	2.22	2.50	140	280	60	44.0	36.9	50.0
W16-1	1.38	1.15	1.21	2.20	1.91	1.96	230	300	80	37.2	40.0	38.5
W17	1.33	1.42	1.48	2.55	2.28	2.52	160	240	270	48.1	37.8	41.3
W17-1	1.33	1.41	1.33	1.85	2.49	2.38	230	220	280	28.1	43.6	44.0

Table S5. Total, 2 mm, 1 mm, 0.5 mm and 0.25 mm (g) % of water stable soil aggregates (g) for each time frame. Pre= Pre-burn; Post= Post burn; Green = Green-up.

	Total		2 mm				1 mm			0.5 mm			0.25 mm		
Subplot	Pre	Post	G	Pre	Post	G	Pre	Post	G	Pre	Post	G	Pre	Post	G
66.01	66.4	83.3	73.8	52.8	80.8	64.5	3.5	1.1	2.9	1.9	0.6	2.6	1.9	0.6	2.6
66.01-2	77.4	60.4	80.9	71.8	53.8	73.7	1.7	3.4	1.8	1.6	1.2	0.6	1.6	1.2	0.6
66.02	89.6	78.7	67.2	74.1	76.3	63.6	6.8	0.9	1.8	4.5	0.5	0.8	4.5	0.5	0.8
66.02-2	72.9	86.3	65.0	62.1	84.3	61.5	3.5	1.3	1.7	2.2	0.1	0.7	2.2	0.1	0.7
67.02-1	98.6	83.0	76.9	90.4	72.1	74.6	3.3	2.2	1.2	2.1	2.4	0.7	2.1	2.4	0.7
67.02-2	78.8	75.1	72.4	69.3	67.7	58.2	4.8	3.5	11.0	3.2	2.0	1.8	3.2	2.0	1.8
19.01	92.2	90.3	87.9	51.5	24.2	31.2	2.4	3.5	4.5	10.1	14.6	31.9	10.1	14.6	31.9
19.01-2	90.2	117.8	88.2	27.0	39.1	29.5	7.4	3.2	5.4	32.4	62.0	29.2	32.4	62.0	29.4
W01	69.6	82.1	85.9	46.6	60.4	54.7	2.7	3.5	6.0	2.1	1.9	3.7	2.1	1.9	3.7
W01-1	74.5	76.4	80.4	59.7	54.0	49.5	2.9	3.2	4.4	0.9	2.1	3.3	0.9	2.1	3.3
W02	85.6	82.0	82.0	57.2	40.1	31.6	11.4	14.0	9.1	7.4	9.0	9.8	7.4	9.0	9.8
W02-1	82.3	95.6	91.2	71.3	59.6	39.3	3.9	16.4	15.4	2.9	13.4	31.2	2.9	13.4	31.2
W03	71.9	77.9	79.2	49.6	65.9	64.3	7.5	5.1	5.6	3.0	3.5	3.6	3.0	3.5	3.6
W03-1	61.3	84.9	77.4	40.6	57.8	56.7	5.3	9.6	5.8	1.9	5.8	3.5	1.9	5.8	3.5
W04	83.1	87.7	90.0	66.7	50.4	74.9	5.5	13.3	4.1	3.6	8.8	2.6	3.6	8.8	2.5
W04-1	81.4	108.6	83.7	56.3	50.7	43.9	8.4	16.9	12.3	7.2	9.9	7.7	7.2	9.9	7.7
W05.1	82.0	89.3	90.0	52.5	51.1	63.5	5.1	6.3	3.7	3.6	9.7	3.8	3.4	9.7	3.8
W05.1-1	74.3	88.9	86.1	56.1	31.1	36.6	2.0	20.8	5.9	1.8	28.8	3.0	1.8	28.3	3.0

Table S6. Soil mass water content (g) and soil volumetric water content (g³).

Sub-Plot	Mass Water Content (g)			Volumetric Water Content (g ³)		
	Pre-Burn	Post-Burn	Green-Up	Pre-Burn	Post-Burn	Green-Up
66.01	0.29	0.28	0.34	0.34	0.25	0.33
66.01-2	0.24	0.30	0.30	0.29	0.50	0.49
66.02	0.28	0.26	0.24	0.30	0.34	0.42
66.02-2	0.28	0.24	0.31	0.55	0.32	0.44
67.02-1	0.24	0.27	0.33	0.37	0.40	0.44
67.02-2	0.38	0.26	0.35	0.36	0.31	0.33
19.01	0.03	0.14	0.09	0.04	0.12	0.09
19.01-2	0.03	0.11	0.11	0.04	0.11	0.14
W01	0.15	0.14	0.05	0.21	0.22	0.05
W01-1	0.13	0.17	0.02	0.21	0.30	0.03
W02	0.18	0.19	0.05	0.23	0.24	0.04
W02-1	0.15	0.17	0.07	0.21	0.23	0.08
W03	0.19	0.90	0.03	0.27	0.82	0.03
W03-1	0.17	0.21	0.03	0.22	0.30	0.04
W04	0.15	0.26	0.03	0.17	0.26	0.03
W04-1	0.16	0.21	0.04	0.18	0.30	0.04
W05.1	0.14	0.20	0.00	0.21	0.27	0.00
W05.1-1	0.20	0.21	0.04	0.30	0.21	0.05
W5	0.17	0.11	0.05	0.26	0.18	0.07
W5-1	0.18	0.22	0.03	0.25	0.25	0.04
W7	0.17	0.18	0.12	0.21	0.17	0.15
W7-1	0.16	0.16	0.03	0.24	0.27	0.05
W8	0.15	0.14	0.06	0.19	0.21	0.05
W8-1	0.20	0.22	0.07	0.24	0.20	0.08
W11	0.06	0.13	0.11	0.08	0.17	0.13
W11-1	0.04	0.12	0.10	0.04	0.17	0.13
W12	0.07	0.12	0.24	0.08	0.17	0.20
W12-1	0.05	0.09	0.21	0.06	0.14	0.20
W13	0.06	0.15	0.30	0.08	0.20	0.32
W13-1	0.07	0.10	0.27	0.08	0.12	0.25
W14	0.04	0.08	0.08	0.05	0.10	0.08

W14-1	0.06	0.09	0.09	0.06	0.10	0.17
W15	0.06	0.13	0.11	0.08	0.18	0.16
W15-1	-0.95	0.13	0.08	-1.15	0.19	0.08
W16	0.04	0.12	0.18	0.05	0.17	0.23
W16-1	0.03	0.09	0.20	0.05	0.11	0.24
W17	0.05	0.11	0.10	0.06	0.16	0.14
W17-1	0.04	0.13	0.18	0.06	0.18	0.23

Table S7. 0-horizon density, depth, and mass water content for each time frame. Pre= Pre-burn; Post= Post burn; G= Green-up.

Subplot	Density (g m ⁻³)			Depth (cm)			Mass Water Content (g)		
	Pre	Post	G	Pre	Post	G	Pre	Post	G
66.01	5.50	10.05	2.73	6.00	0.25	1.00	0.35	0.63	0.20
66.01-2	6.92	3.87	9.56	3.00	0.25	2.50	0.81	0.39	0.80
66.02	10.37	3.19	3.71	4.00	0.25	0.50	0.63	0.15	0.32
66.02-2	7.78	2.07	2.51	3.00	0.10	0.50	0.24	0.06	0.16
67.02-1	5.68	9.76	18.98	3.50	0.25	2.50	1.41	0.53	0.85
67.02-2	3.83	6.14	2.48	3.00	0.25	1.00	1.84	0.28	0.14
19.01	9.90	2.87	4.28	3.50	1.00	2.00	0.70	0.38	0.32
19.01-2	8.52	4.41	4.77	4.00	1.00	1.50	0.50	0.20	0.17
W01	6.10	3.30	2.38	2.50	2.00	1.50	0.26	0.32	0.08
W01-1	10.27	1.10	0.48	3.00	0.50	0.50	0.23	0.35	0.23
W02	5.06	2.32	2.48	2.00	1.50	1.00	0.26	0.35	0.15
W02-1	2.23	2.48	1.46	1.00	2.50	0.50	0.35	0.43	0.18
W03	6.20	0.54	1.76	2.00	0.10	1.50	0.20	0.55	0.18
W03-1	5.06	0.22	4.31	2.50	0.10	1.00	1.18	0.53	0.70
W04	2.23	5.99	4.32	3.00	1.00	1.50	0.18	0.15	0.16
W04-1	11.58	4.65	7.74	3.50	1.50	2.50	0.16	0.39	0.18
W05.1	5.88	1.36	3.42	3.00	0.25	1.50	0.25	0.25	0.16
W05.1-1	6.99	3.88	5.04	2.50	0.25	2.00	0.20	0.33	0.10
W5	10.65	2.36	2.31	3.00	1.50	1.50	0.21	0.31	0.25
W5-1	4.08	3.70	2.39	1.00	1.00	1.50	0.15	0.32	0.25
W7	5.52	2.52	1.51	2.00	0.50	1.00	0.37	0.37	0.28
W7-1	8.21	0.22	1.10	3.00	0.25	0.50	0.33	0.70	0.27
W8	5.08	2.90	2.96	1.00	1.00	1.00	0.21	0.36	0.23
W8-1	11.29	3.74	8.89	3.00	1.00	2.00	0.16	0.45	0.26
W11	7.36	5.85	5.89	1.25	0.50	3.00	0.13	0.07	0.11
W11-1	7.57	4.18	3.20	1.50	0.50	1.00	0.13	0.06	0.07
W12	3.39	4.42	5.78	0.25	0.25	2.00	0.09	0.13	0.29
W12-1	5.22	3.08	6.13	1.25	0.50	2.00	0.10	0.07	0.21
W13	6.39	7.03	3.67	0.75	1.00	0.50	0.14	0.27	0.26

W13-1	3.93	7.59	3.43	0.50	3.00	2.50	0.11	0.08	0.24
W14	7.26	8.31	3.82	3.50	1.50	1.00	0.17	0.07	0.10
W14-1	15.69	6.19	4.13	7.00	1.50	1.50	0.12	0.09	0.03
W15	5.19	8.43	8.27	2.00	1.00	1.00	0.17	0.20	0.14
W15-1	5.08	8.16	2.31	3.50	1.75	0.25	0.14	0.10	0.07
W16	2.50	6.08	3.54	0.75	1.00	1.00	0.07	0.12	0.22
W16-1	4.12	5.61	5.86	1.25	0.50	0.50	0.06	0.26	0.24
W17	3.14	5.55	4.45	0.25	0.25	0.25	0.06	0.05	0.11
W17-1	4.33	3.22	10.19	0.25	0.25	0.25	0.05	0.03	0.26