



Supplement of

Using eddy covariance observations to determine the carbon sequestration characteristics of subalpine forests in the Qinghai–Tibet Plateau

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Table S1: Site information for eddy covariance study of alpine ecosystems in the Qinghai-Xizang Plateau

Article title	Latitude	Longitude	Altitude (m)	Ecosystem type	Annual temperature (°C)	Precipitation (mm)	NEE (g C/m ² /Year)
Impacts of the rangeland degradation on CO ₂ flux and the underlying mechanisms in the Three-River Source Region on the Qinghai-Tibetan Plateau (in Chinese)	34.40	100.40	3958	meadow	-0.5	500	-120.9
Using Eddy Covariance Observations to Determine the Carbon Sequestration Characteristics of Subalpine Forests in the Qinghai Tibet Plateau	29.28	98.69	3755	forest	5.25 5.76	493 372	-332.9 -351.02
Carbon dioxide flux characteristics in an <i>Abies fabri</i> mature forest on Gongga Mountain, Sichuan, China (in Chinese)	29.95	100.99	3300	forest	4	1938	-241.87
Impact of Drought Stress on Net CO ₂ Exchange above an Alpine Grassland Ecosystem in the Central Tibetan Plateau	30.49	91.06	4333	meadow	2	483.2	52.4
Effect of growing season degree days on gross primary productivity and its variation characteristics in alpine shrubland at the southern foot of Qilian mountains (in Chinese)	37.48	101.2	3200	shrub	-1	580	101.89
Soil CO ₂ flux characteristics in alpine meadow of permafrost regions in the upper reaches of the Shule River, Qilianshan Mountains (in Chinese)	38.47	98.32	3890	frozen soil	-4.8	417	389.96
Changing Features of CO ₂ Fluxes in Alpine Meadow in the Upper Reaches of Shule River ,Qilianshan (in Chinese)	38.41	98.316	3885	meadow	-4	388	36.93
Carbon flux variation characteristics and its influencing factors in an alpine meadow ecosystem on eastern Qinghai—Tibetan plateau (in Chinese)	38.05	100.45	3033	meadow	0.7	400	156
Soil CO ₂ emission and carbon balance in alpine grassland	31.23	90.01	4800	steppe	-1.2	380	51.17

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ecosystem of Qinghai-Tibet Plateau (in Chinese)							
Diurnal and monthly variation characteristics of CO ₂ flux in alpine shrubland of Qinghai-Tibet Plateau (in Chinese)	37.61	101.31	3200	shrub	-14.8	580	61.9
CO ₂ flux dynamics and its limiting factors in the alpine shrub-meadow and steppe-meadow on the Qinghai-Xizang Plateau (in Chinese)	37.7	101.3	3200	shrub			-70
			4200	steppe	-1.7	570	5
Annual Carbon Dioxide Flux Variations of Alpine Shrub Ecosystem in the Qinghai-Tibet Plateau (in Chinese)	37.61	101.31	3200	shrub	9.8	570	-187
Characteristics of CO ₂ flux over the alpine wetland in the Tibetan Plateau and its control factors (in Chinese)	33.16	96.56	4167	wetland			126.8
CO ₂ flux in alpine wetland ecosystem on the Qinghai-Tibetan Plateau (in Chinese)	37.7	101.3	3200	wetland	-1.7	580	86.19
Study on Carbon-Water Flux and Water Use Efficiency of Alpine Wetland Ecosystem in Qinghai-Tibet Plateau (in Chinese)	37.61	101.33	3235	meadow	-1.7	580	120.45
Net Ecosystem Carbon Dioxide Exchange in Alpine Meadow of Nagchu Region over Qinghai-Xizang Plateau (in Chinese)	31.37	91.9	4509	meadow	-1.3	465.7	-41.3
Interannual dynamics and driving mechanism of CO ₂ flux in meadow grassland on the north shore of Qinghai Lake (in Chinese)	36.95	100.85	3140	steppe	0.5	391.9	-63.51
Variation of CO ₂ Flux of Alpine Wetland Ecosystem of <i>Kobresia tibetica</i> Wet Meadow in Lake Qinghai (in Chinese)	36.70	100.78	3228	wetland	2.7	320.14	54.55
Characteristics of CO ₂ exchange on different time scales of peat wetland land-atmosphere system in Qinghai Lake basin (in	37.74	100.09	3750	wetland	-3.06	462.8	209.31

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Chinese) CO ₂ fluxes of artificial grassland in the source region of The Three Rivers on The Qinghai – Tibetan Plateau China (in Chinese)	34.41	100.43	3980	steppe	-2.6	513.02	-49.35
Variation in net CO ₂ exchange, gross primary production and its affecting factors in the planted pasture ecosystem in Sanjiangyuan Region of the Qinghai-Tibetan Plateau of China (in Chinese)	34.41	100.68	3980	steppe	-0.5	500	30.27
Observations and study on the CO ₂ flux in an alpine meadow ecosystem in the upper reaches of the Shule River Basin (in Chinese)	38.41	98.31	3885	meadow	-4	378.4	-43.63
Long-Term (2007 to 2018) Energy and CO ₂ Fluxes over an Agriculture Ecosystem in the Southeastern Margin of the Tibetan Plateau	25.70	100.17	1977.7	farmland	15.1	1048.1	-218
Interannual characteristics and driving mechanism of CO ₂ fluxes during the growing season in an alpine wetland ecosystem at the southern foot of the Qilian Mountains	37.58	101.33	3250	wetland	-1.1	490	-67.5
Net ecosystem exchange of carbon dioxide fluxes and its driving mechanism in the forests on the Tibetan Plateau	37.13	102.36	2523	forest	2.2	505	-545.99
Significant CO ₂ sink over the Tibet's largest lake: Implication for carbon neutrality across the Tibetan Plateau	31.8	88.61	4543	lake	0.9		-315.5
Seasonal and Inter-Annual Variations of Carbon Dioxide Fluxes and Their Determinants in an Alpine Meadow	32.13	102.1	3500	meadow	1.5	761	94.69

Article title	Latitude	Longitude	Altitude (m)	Ecosystem type	Annual temperature (°C)	Precipitation (mm)	NEE (g C/m ² /Year)
Effects of precipitation seasonal distribution on net ecosystem CO ₂ exchange over an alpine meadow in the southeastern Tibetan Plateau	27.16	100.23	3560	meadow	5	1200	-140.3
Significant winter CO ₂ uptake by saline lakes on the Qinghai-Tibet Plateau	37.25	100.78	3194	lake	-0.13	925	-197.1
Environmental Controls on Multi-Scale Dynamics of Net Carbon Dioxide Exchange From an Alpine Peatland on the Eastern Qinghai-Tibet Plateau	32.76	102.5	3510	peatland	1.8	746	-226.61 -185.35
	37.6	101.3	3200	meadow	-1.7	570	-79.3
Atmospheric water vapor and soil moisture jointly determine the spatiotemporal variations of CO ₂ fluxes and evapotranspiration across the Qinghai-Tibetan Plateau grasslands	37.66	101.33	3400	shrub	-0.3	461	-77.8
	37.6	101.31	3200	steppe	-0.8	433.7	-66.7
	36.98	100.83	3140	steppe	0.8	398.2	20.2
	30.41	91.08	4333	wetland	1.3	476.8	100.9
Carbon Sink of a Very High Marshland on the Tibetan Plateau	30.95	88.68	4,760	marshland	0.5		-187
The response of CO ₂ fluxes to the amplitude of diurnal temperature in alpine meadow during growing season from 2002 to 2016 at the southern foot of Qilian Mountains (in Chinese)	37.75	101.38	3600	meadow	-1	480	-230.4
Seasonal and Interannual Variations of CO ₂ Fluxes Over 10 Years in an Alpine Wetland on the Qinghai-Tibetan Plateau	37.58	101.33	3250	wetland	-1.1	490	120.4
Net ecosystem carbon budget of a grassland ecosystem in central Qinghai-Tibet Plateau: integrating terrestrial and aquatic carbon fluxes at catchment scale	34.71	92.88		meadow	-4.5	272	-39.6
Carbon and water fluxes in an alpine steppe ecosystem in the	30.76	90.98	4730	steppe	-0.6	405	-62.6

Article title	Latitude	Longitude	Altitude (m)	Ecosystem type	Annual temperature (°C)	Precipitation (mm)	NEE (g C/m ² /Year)
Nam Co area of the Tibetan Plateau during two years with contrasting amounts of precipitation							- 32.4
Carbon and water fluxes and their coupling in an alpine meadow ecosystem on the northeastern Tibetan Plateau	38.04	100.46	3033	meadow	1.49	422.56	- 152.89 -197.69 -160.09 -118.49
Interannual and seasonal variations in carbon exchanges over an alpine meadow in the northeastern edge of the Qinghai-Tibet Plateau, China	38.41	98.31		meadow	-5	350	-130.75 -195.83 -160.65
Five-Year Measurements of Net Ecosystem CO ₂ Exchange at a Fen in the Zoige Peatlands on the Qinghai-Tibetan Plateau	33.10	102.65	3460	peatland	1.5	350	-123.9
Water and carbon dioxide exchange of an alpine meadow ecosystem in the northeastern Tibetan Plateau is energy-limited	38.05 38.84 38.01	100.46 98.94 100.24	3033 3739 4148	steppe	0.6 -3.4 -4.2	464.1 388.6 479.9	-198.7 -258.9 -105.3
Characteristics of CO ₂ , water vapor, and energy exchanges at a headwater wetland ecosystem of the Qinghai Lake	37.73	100.08	3753	wetland	0.1	400	-53.84 -211.85 -147.27
CO ₂ Exchange in an Alpine Swamp Meadow on the Central Tibetan Plateau	30.46	91.21	4286	meadow	2.49 2.60 2.79 3.19 3.39	475.6	-125.45 -190.91 -158.18 -190.91
Diurnal and Seasonal Variations in the Net Ecosystem CO ₂ Exchange of a Pasture in the Three-River Source Region of	34.41	100.68	3980	meadow	-0.5	500	-140.01

