Table S1. Changes in soil physical indicators at 0-10 cm, 10-20 cm and 20-30 cm soil depth under different vegetation types.

Vegetation types	Soil depths(cm)	BD (g/cm^3)	AWC (%)	Sand (%)	Silt (%)	Clay (%)
POP	0-10	1.27±0.009Ba	16.17±0.48Ca	43.90±1.05Aa	37.68±0.66Aa	18.47±0.53Ba
	10-20	1.28±0.009Ba	31.00±0.93Ba	43.57±1.05Aa	37.17±0.63Aa	19.25±0.52Ba
	20-30	1.33±0.012Aa	44.00±1.44Aa	42.45±1.12Aa	36.5±0.65Aa	21.05±0.55Aa
PTP	0-10	1.22±0.006Bb	15.63±1.05Ca	46.46±1.80Aa	35.47±1.81Aa	18.06±0.41Ba
	10-20	1.23±0.008Bc	30.63±2.03Ba	46.05±1.93Aa	34.41±1.81Aa	19.55±0.36ABa
	20-30	1.26±0.009Ac	43.50±3.08Aa	45.51±1.93Aa	34.34±1.74Aa	20.16±0.80Aa
PPM	0-10	1.24±0.010Aab	15.75±0.25Ca	44.98±2.03Aa	36.28±1.9Aa	18.78±0.76Ba
	10-20	1.24±0.017Abc	30.75±1.03Ba	44.28±2.12Aa	35.85±2.23Aa	19.85±0.57ABa
	20-30	1.28±0.017Abc	44.50±2.25Aa	43.05±2.23Aa	35.57±2.09Aa	21.35±0.77Aa
POCB	0-10	1.24±0.007Bab	16.25±2.18Ca	44.32±2.13Aa	36.16±1.11Aa	19.53±1.34Aa
	10-20	1.25±0.007Bbc	26.25±1.20Ba	43.83±2.08Aa	35.86±1.07Aa	20.29±1.28Aa
	20-30	1.29±0.008Abc	39.50±1.74Aa	43.03±2.59Aa	35.74±1.16Aa	21.25±1.73Aa
PTCB	0-10	1.24±0.010Bab	14.40±0.93Ca	46.26±2.34Aa	34.64±0.96Aa	19.08±1.60Aa
	10-20	1.25±0.011Bbc	27.60±1.86Ba	45.32±2.33Aa	34.60±0.78Aa	20.08±1.67Aa
	20-30	1.29±0.013Abc	38.00±2.28Aa	45.26±2.76Aa	34.66±0.10Aa	20.12±1.97Aa
DBMF	0-10	1.22±0.015Bb	14.20±0.61Ca	41.79±1.47Aa	39.13±0.91Aa	19.09±0.75Ba
	10-20	1.24±0.014Bc	28.10±1.29Ba	41.18±1.60Aa	38.40±0.93Aa	20.42±0.87ABa
	20-30	1.28±0.013Abc	39.60±1.68Aa	39.58±1.80Aa	38.55±1.02Aa	21.86±0.99Aa
NF	0-10	1.26±0.007Ba	14.88±0.79Ca	46.82±1.95Aa	35.39±1.44Aa	17.79±0.71Aa
	10-20	1.27±0.007Bab	29.63±1.72Ba	46.50±1.97Aa	35.26±1.38Aa	18.24±0.68Aa
	20-30	1.31±0.009Aab	41.75±3.08Aa	45.60±2.29Aa	34.93±1.47Aa	19.47±1.06Aa

Note: BD: Bulk density; AWC: Available water capacity; Sand: Sand content; Silt: Silt content; Clay: Clay content. Different uppercase letters equal differences between different depths for the same vegetation type; different lowercase letters equal differences between different vegetation types at the same depth ($p<0.05$).

Table S2. Changes in soil chemical indicators at 0-10 cm, 10-20 cm and 20-30 cm soil depth under different vegetation types.

Vegetation types	Soil depths (cm)	SOM(g/kg)	TN(g/kg)	TP(g/kg)	TK(g/kg)	AN(mg/kg)	AP(mg/kg)	AK(mg/kg)	pH	CEC (mmol/kg)
POP	0-10	38.56±2.75Acd	2.45±0.16Ab	0.45±0.05Aa	30.70±10.23Aa	196.13±13.14Ab	1.74±0.37Aa	213.15±28.91Aab	7.08±0.22Abc	182.67±5.60Aab
	10-20	27.16±2.55Bbc	1.62±0.19Bbc	0.39±0.04Aa	31.76±10.68Aa	137.67±17.84Bb	1.23±0.34Aa	142.82±28.92ABab	7.14±0.25Ab	171.50±3.95Aa
	20-30	22.91±2.75Bbc	1.38±0.23Bbc	0.37±0.04Aa	31.57±11.47Aa	113.41±18.02Bab	1.25±0.27Aa	118.16±11.17Bab	7.09±0.32Ab	170.67±4.00Aa
PTP	0-10	61.50±8.27Aabc	3.01±0.39Ab	0.56±0.07Aa	24.03±6.24Aa	228.59±30.94Aab	3.15±0.46Aa	307.38±74.14Aa	6.64±0.40Ac	181.00±5.50Aab
	10-20	45.13±7.54Aab	2.25±0.32Aab	0.48±0.06Aa	24.22±5.69Aa	150.09±20.65Bab	2.44±0.40ABa	203.09±42.85Aa	6.85±0.39Ab	167.75±5.47Aa
	20-30	40.58±5.83Aab	2.01±0.25Ab	0.51±0.05Aa	26.10±7.13Aa	140.07±21.48Ba	1.69±0.22Ba	156.43±37.62Aab	7.02±0.43Ab	167.13±4.85Aa
PPM	0-10	46.61±13.11Abcd	2.64±0.24Ab	0.44±0.09Aa	18.87±1.59Aa	176.22±25.18Ab	1.68±0.55Aa	174.85±31.14Aab	7.76±0.49Aab	193.75±1.49Aa
	10-20	47.23±14.74Aab	2.31±0.43Aab	0.45±0.10Aa	18.90±2.20Aa	157.40±22.13Aab	1.59±0.51Aa	149.82±26.57Aab	7.72±0.46Aab	178.25±0.75Ba
	20-30	39.00±10.11Aab	1.97±0.32Ab	0.42±0.09Aa	18.64±1.21Aa	135.95±25.04Aa	1.26±0.38Aa	138.95±17.44Aab	7.72±0.61Ab	179.25±1.11Ba
POCB	0-10	61.46±12.71Aabc	2.80±0.38Ab	0.60±0.05Aa	30.51±5.18Aa	191.70±23.19Ab	6.14±3.50Aa	312.12±67.14Aa	7.39±0.35Abc	185.88±7.28Aab
	10-20	46.81±10.30Aab	2.25±0.29Aab	0.57±0.04Aa	30.23±5.02Aa	154.39±16.15ABab	4.35±2.42Aa	212.97±44.95Aa	7.54±0.36Ab	179.63±7.74Aa
	20-30	40.32±8.51Aab	2.00±0.22Ab	0.54±0.04Aa	29.77±4.34Aa	133.01±11.30Ba	4.29±2.83Aa	178.36±48.67Aa	7.52±0.40Ab	177.38±7.74Aa
PTCB	0-10	75.37±20.04Aab	3.75±0.95Aab	0.52±0.07Aa	29.73±10.81Aa	236.51±53.11Aab	2.46±0.53Aa	231.29±23.84Aab	6.92±0.15Abc	184.40±8.90Aab
	10-20	37.25±7.83Aabc	2.01±0.34ABbc	0.44±0.05Aa	29.29±10.16Aa	134.35±29.27Ab	1.75±0.39Aa	133.12±18.10Bab	7.02±0.14Ab	166.00±8.80Aa
	20-30	33.67±6.81Ab	1.72±0.28Bb	0.43±0.07Aa	29.17±10.19Aa	145.74±44.96Aa	1.50±0.28Aa	118.29±15.78Bab	7.08±0.21Ab	164.60±7.85Aa
DBMF	0-10	88.47±8.63Aa	4.66±0.41Aa	0.56±0.05Aa	24.75±4.12Aa	287.59±15.9Aa	3.55±0.39Aa	266.10±35.43Aab	7.30±0.25Abc	180.20±5.92Aab
	10-20	67.41±11.49ABa	3.49±0.57ABa	0.52±0.06Aa	26.13±4.46Aa	217.10±27.78Ba	2.68±0.43ABa	185.92±21.00ABa	7.34±0.27Ab	169.40±7.77Aa
	20-30	59.21±8.00Ba	3.08±0.43Ba	0.49±0.06Aa	26.61±4.45Aa	187.15±25.65Ba	2.24±0.36Ba	168.33±25.98Ba	7.44±0.25Ab	168.60±7.46Aa
NF	0-10	18.11±2.01Ad	1.14±0.14Ac	0.50±0.09Aa	18.97±3.29Aa	74.37±9.52Ac	5.76±3.21Aa	115.52±30.51Ab	8.61±0.13Aa	172.00±4.44Ab
	10-20	13.20±1.94ABc	0.88±0.13ABc	0.48±0.10Aa	17.21±3.53Aa	63.33±11.75Ac	4.82±3.03Aa	69.95±18.15Ab	8.63±0.13Aa	158.88±4.37Ba
	20-30	10.67±1.80Bc	0.70±0.10Bc	0.42±0.07Aa	17.46±3.72Aa	47.57±9.33Ab	2.84±1.13Aa	60.14±16.68Ab	8.74±0.08Aa	159.00±3.85Ba

Note: SOM: Soil organic matter; TN: Total nitrogen; TP: Total phosphorus; TK: Total potassium; AN: Available nitrogen; AP: Available phosphorus; AK: Available potassium. AN: Available nitrogen; AP: Available phosphorus; AK: Available potassium; CEC: Cation exchange capacity. Different uppercase letters equal differences between different depths for the same vegetation type; different lowercase letters equal differences between different vegetation types at the same depth ($p<0.05$).