Table S1. The checklist of the alien invasive plants in Dayao Mountain National Nature Reserve.

Species Name	Family	Place of Origin	Introduction Time
Ageratum conyzoides	Asteraceae	Tropical America	OLD
Bidens pilosa	Asteraceae	Tropical, subtropical America and Asia	OLD
Erigeron annuus	Asteraceae	North America	OLD
Erigeron canadensis	Asteraceae	North America	OLD
Dysphania ambrosioides	Amaranthaceae	Tropical America	OLD
Oxalis corymbosa	Oxalidaceae	South America	OLD
Crassocephalum crepidioides	Asteraceae	Africa	NEW
Erechtites valerianifolius	Asteraceae	Tropical America	NEW
Galinsoga parviflora	Asteraceae	South America	NEW
Galinsoga quadriradiata	Asteraceae	Mexico	NEW
Praxelis clematidea	Asteraceae	South America	NEW
Symphyotrichum subulatum	Asteraceae	North America	NEW
Melilotus officinalis	Fabaceae	Central Asia, West Asia to Southern Europe	NEW
Paspalum conjugatum	Poaceae	Tropical America	NEW
Pilea microphylla	Urticaceae	Tropical America	NEW
Solanum aculeatissimum	Solanaceae	Brazil	NEW
Solanum americanum	Solanaceae	Americas	NEW
Spermacoce alata	Rubiaceae	South America	NEW

The time of introduction refers to when the species was first discovered in China, and we distinguish between old invasive exotic herbs (introduced to China before 1900) and new invasive exotic herbs (introduced to China after 1900).

Table S2. Plots investigation of herbs in Dayao Mountain National Nature Reserve

Site	latitude	longitude	Altitude	Habitat type	Grade
1	24.0023	110.0385	1313	Core area riverside	1
2	24.0211	110.0512	1292	Near the parking lot	4
3	24.9734	110.1123	1219	Abandoned houses	3
4	24.970374	110.118638	1094	Asphalt roadside	2
5	23.97722	110.117819	998	Asphalt roadside	2
6	23.982291	110.118481	908	Asphalt roadside	2
7	23.980618	110.121888	808	Abandoned land	3
8	23.980715	110.128052	754	Protected area boundary	3
9	24.2157	110.3556	350	Asphalt roadside	2
10	24.214448	110.357607	338	Riverside trestle	2
11	24.213499	110.354322	336	Abandoned houses	3
12	24.209491	110.353554	292	Asphalt roadside	2
13	24.144981	110.239331	1002	Protection station roadside	4
14	24.1507	110.2358	1059	Asphalt roadside	2
15	24.152678	110.233106	1092	Asphalt roadside	2
16	24.240074	110.26639	622	Asphalt roadside	2
17	24.2393	110.2659	596	Asphalt roadside	2
18	24.237033	110.265427	535	Asphalt roadside	2
19	24.234651	110.266804	511	Abandoned houses	3
20	24.230461	110.265865	505	Abandoned houses	3
21	24.168732	110.244034	1176	Riverside trestle	2
22	24.1744	110.2428	1148	Abandoned farming plant	3
23	24.020557	110.248887	509	Asphalt roadside	2
24	24.019852	110.252469	550	Asphalt roadside	2
25	24.017687	110.251452	563	Asphalt roadside	2
26	24.156289	110.109074	909	Near the weather station	3
27	24.14938	110.111265	962	Abandoned houses	3
28	24.144569	110.107016	707	Protected area boundary	3
29	24.1392	110.103172	630	Scenic area entrance	3
30	23.911808	110.035903	862	Asphalt roadside	2
31	23.908909	110.043528	824	Park roadside	3
32	23.9008	110.0464	879	Asphalt roadside	2
33	23.897148	110.044587	919	Protected area boundary	3

The habitat types around the sample sites are classified as (I) stony walkways for pedestrians only; (II) asphalt or tarmac roads for vehicles and pedestrians; (III) abandoned land and abandoned houses, etc.; and (IV) sites with high human impact such as planted forests and scenic parking lots. They were

estimated as 4 grade scale: 1 = no significant interference, 2 = weak interference, 3 = moderate interference, 4 = heavy interference.

Table S3. Linear mixed models constructed for native herbs, all invasive alien herbs, new and old invasive alien herbs richness and various environmental factors at the altitude gradient of the reserve.

Species Category	Environment Variables	t	*P*	Explained Variance (%)
Native herbs	Mean temperature of warmest quarter	2.113	0.043	70.18
	Annual precipitation	0.441	0.662	15.21
	Interference intensity	−0.773	0.445	9.77
	Dis. human settlement	−0.775	0.445	4.84
All invasive alien herbs	Mean temperature of warmest quarter	−2.583	0.015	34.82
	Annual precipitation	1.217	0.234	17.94
	Interference intensity	3.330	0.002	39.71
	Dis. human settlement	−0.440	0.663	7.54
New invasive alien herbs	Mean temperature of warmest quarter	−3.759	＜0.001	53.49
	Annual precipitation	−1.394	0.173	6.56
	Interference intensity	2.555	0.016	34.15
	Dis. human settlement	0.272	0.787	5.80
Old invasive alien herbs	Mean temperature of warmest quarter	0.778	0.443	3.50
	Annual precipitation	1.291	0.207	46.95
	Interference intensity	1.451	0.157	43.27
	Dis. human settlement	−0.532	0.599	6.28

Table S4. Information on herbs species in plots of Dayao Mountain National Nature Reserve.

Plot Number	Invasive Alien Herbs	Native Herbs	Total Herbs	Elevation (m a.s.l.)
1-1	1	3	4	1313
1-2	1	6	7	1313
1-3	1	4	5	1313
2-1	4	10	14	1292
2-2	2	9	11	1292
2-3	3	8	11	1292
3-1	3	6	9	1219
3-2	1	10	11	1219
3-3	3	4	7	1219
3-4	3	3	6	1219
4-1	1	9	10	1094
4-2	1	3	4	1094
4-3	1	3	4	1094
5-1	3	1	4	998
5-2	3	4	7	998
5-3	3	3	6	998
6-1	2	6	8	908
6-2	2	9	11	908
6-3	2	6	8	908
7-1	2	1	3	808
7-2	2	2	4	808
7-3	2	6	8	808
7-4	2	6	8	808
7-5	3	7	10	808
7-6	3	3	6	808
8-1	1	3	4	754
8-2	2	3	5	754
8-3	1	4	5	754
9-1	1	5	6	350
9-2	1	8	9	350
9-3	1	6	7	350
10-1	2	9	11	338
10-2	1	6	7	338
10-3	1	5	6	338
11-1	1	2	3	336

11-2	1	4	5	336
11-3	2	4	6	336
12-1	1	6	7	292
12-2	2	17	19	292
12-3	1	11	12	292
13-1	3	6	9	1002
13-2	2	5	7	1002
13-3	3	4	7	1002
14-1	5	6	11	1059
14-2	3	7	10	1059
14-3	4	7	11	1059
15-1	4	5	9	1092
15-2	2	4	6	1092
15-3	3	6	9	1092
16-1	4	5	9	622
16-2	4	7	11	622
16-3	4	5	9	622
17-1	1	3	4	596
17-2	2	3	5	596
17-3	3	6	9	596
18-1	1	3	4	535
18-2	1	7	8	535
18-3	2	2	4	535
19-1	2	5	7	511
19-2	4	9	13	511
19-3	1	5	6	511
20-1	2	2	4	505
20-2	2	5	7	505
20-3	2	3	5	505
21-1	4	4	8	1176
21-2	3	8	11	1176
21-3	2	7	9	1176
22-1	4	7	11	1148
22-2	5	4	9	1148
22-3	2	2	4	1148
23-1	2	10	12	509
23-2	1	8	9	509
23-3	1	8	9	509

24-1	1	7	8	550
24-2	2	10	12	550
24-3	2	8	10	550
25-1	1	13	14	563
25-2	1	10	11	563
25-3	2	17	19	563
26-1	1	5	6	909
26-2	4	6	10	909
26-3	6	6	12	909
26-4	2	4	6	909
26-5	3	6	9	909
27-1	4	3	7	962
27-2	3	0	3	962
27-3	3	1	4	962
28-1	3	1	4	707
28-2	3	3	6	707
28-3	3	2	5	707
29-1	2	5	7	630
29-2	2	5	7	630
29-3	2	9	11	630
30-1	2	2	4	862
30-2	2	2	4	862
30-3	1	3	4	862
31-1	2	3	5	824
31-2	3	3	6	824
31-3	4	5	9	824
32-1	3	1	4	879
32-2	1	3	4	879
32-3	2	2	4	879
33-1	2	6	8	919
33-2	2	4	6	919
33-3	2	5	7	919

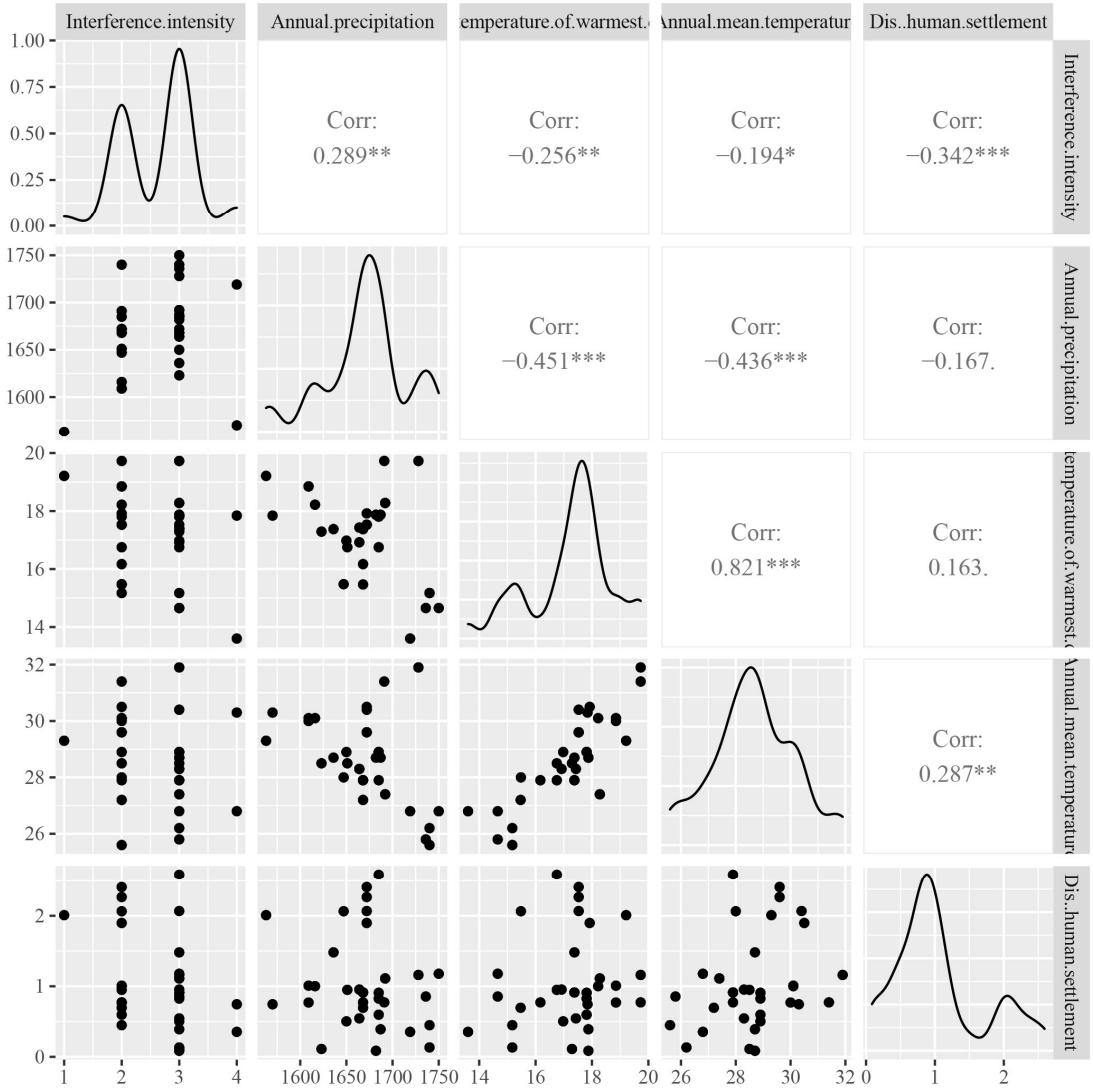

Figure S1. Results of correlation analysis of explanatory variables. Values above 0.7 are considered to have a strong covariance between variables. $*P < 0.05$, $**P < 0.01$, $***P < 0.001$.