

1 **Environmental and Historical Determinants of Patterns of Genetic**

2 **Differentiation in Wild Soybean (*Glycine soja* Sieb. et Zucc)**

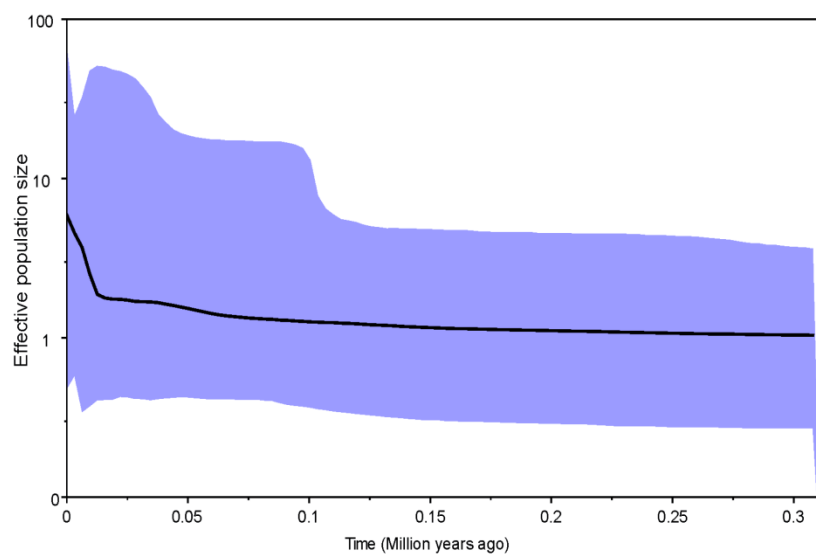
3 Shuilian He, Yunsheng Wang, Dezhu Li & Tingshuang Yi

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6 **Supporting Information**

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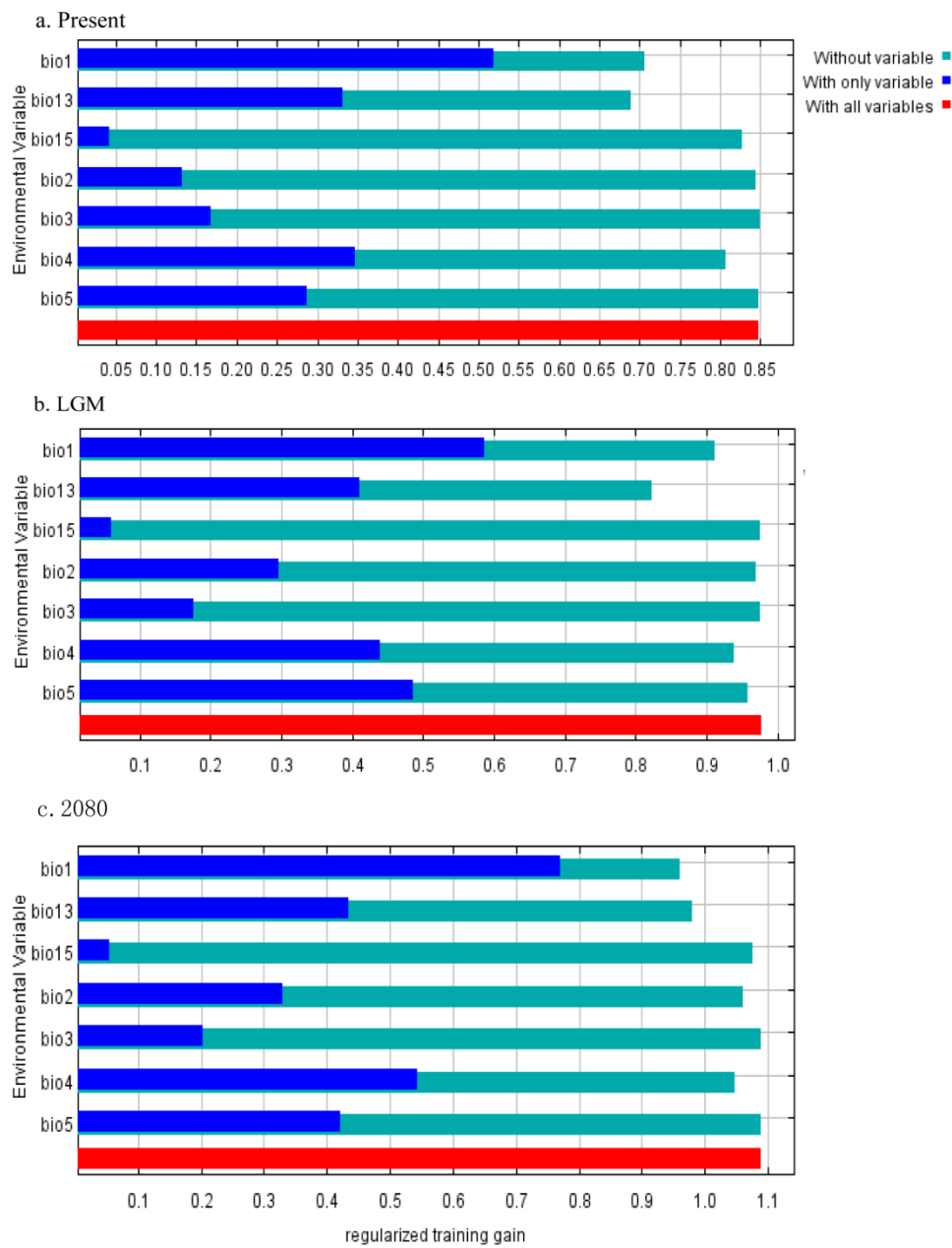


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2 **Figure S1 The effective population size over time for (a) all 52 populations of wild**

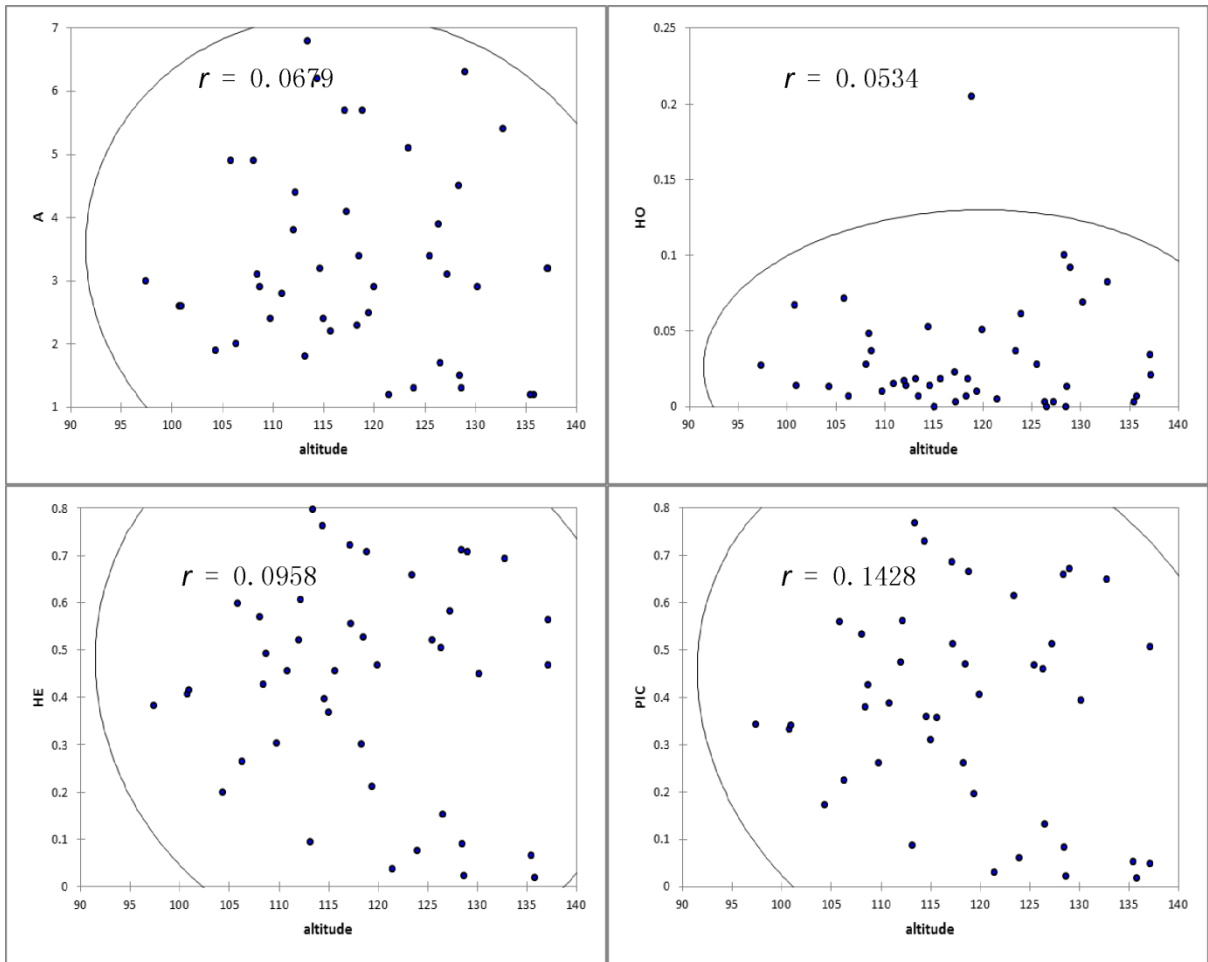
3 **soybean.**

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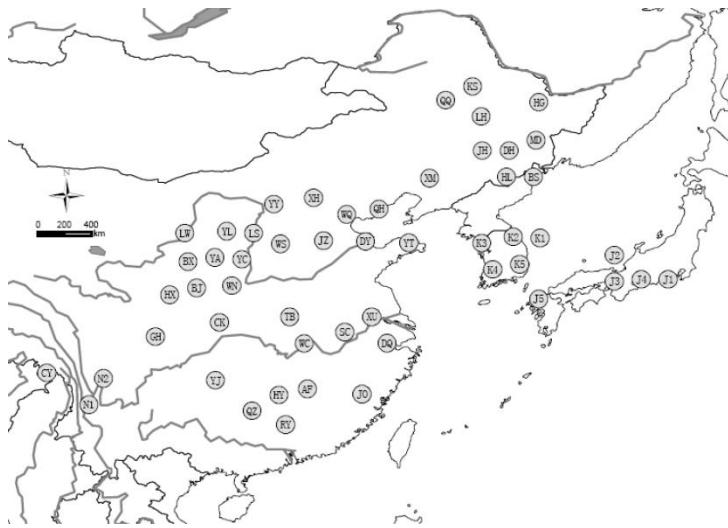
2 **Figure S2 Jackknife analyses of individual predictor importance for wild soybean**
 3 **applied to the Maxent model in relation to overall model quality or “total gain” (grid**
 4 **bar).** Dark blue bars indicate the gain achieved when including that predictor only and
 5 excluding remaining predictors; light blue show how the total gain is diminished without the
 6 given predictor.



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2 **Figure S3**Correlation analysis between altitude and genetic diversity.

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2 **Figure S4 Sample locations of 53 wild soybean populations (ArcMap v9.3).**

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1 **Table S1 Primers and genetic characteristic of the SSR markers used to analyze the collection. For each of the 20 markers, the**
2 **primer sequence, repeat motif, size range, chromosomal location, number of alleles and genotypes, polymorphism information**
3 **content (PIC) value and neutral test results are presented. neu: neutral loci; non: non-neutral test.**

Primer name	Primer sequence(5'to3')	Repeat motif	Size range	linkage group	Allele no.	Genotype no.	PIC	Neutral test
Satt126	F:ATAAAACAAATTCGCTGATAT R:GCTTGGTAGCTGTAGGAA	(ATT)18	109-172	B2	16	22	0.788	neu
Satt135	F:TTCCAATACCTCCCAACTAAC R:CACGGATTTTAAATCATTATTACAT	(ATT)19	141-204	D2	13	19	0.773	neu
satt215	F:GCGCCTTCTTCTGCTAAATCA R:CCCATTCAATTGAGATCCAAAATTAC	(ATT)11	114-221	J	23	34	0.812	neu
Satt216	F:TACCCTTAATCACCGGACAA R:AGGGAACAAACACATTTAATCATCA	(ATT)20	137-251	D1b	24	41	0.909	non
Satt221	F:GCGGCAAACCATTATCTTCATT R:GCGATTGTACCACTAAAAACCATAG	(ATT)23	109-224	D1a	36	44	0.940	non
Satt231	F:GGCACGAATCAACATCAAACTTC R:GCGTGTGCAAATGTTTCATCATCT	(ATT)32	160-328	E	36	47	0.934	non
satt233	F:AAGCATACTCGTCGTAAC R:GCGGTGCAAAGATATTAGAAA	(ATT)16	169-238	A2	21	33	0.863	neu
Satt270	F:TGTGATGCCCTTTTCT R:GCGCAGTGCATGGTTTTCTCA	(ATT)16	183-249	I	18	22	0.764	neu
satt277	F:GGTGGTGGCGGGTACTATTACT R:CCACGCTTCAGTTGATTCTTACA	(ATT)40	128-255	C2	32	45	0.935	non
satt288	F:GCGGGGTGATTTAGTGTTTGACACCT R:GCGCTTATAATTAAGAGCAAAAGAAG	(ATT)17	195-273	G	25	46	0.901	non

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1 **Table S1 continue**

Primer name	Primer sequence(5'to3')	Repeat motif	Size range	linkage group	Allele no.	Genotype no.	PIC	Neutral test
Satt294	F:GCGCTCAGTGTGAAAGTTGTTTCTAT R:GCGGGTCAAATGCAAATTATTTTT	(ATT)23	237-303	C1	18	26	0.902	non
Satt373	F:TCCGCGAGATAAAATTCGTA AAAAT R:GGCCAGATACCCAAGTTGTACTTGT	(TAT)21	210-279	L	23	35	0.914	non
Satt423	F:TTCGCTTGGGTT CAGT TACTT R:GTTGGGGAATTA AAAAAAATG	(ATT)19	225-351	F	24	37	0.878	neu
Satt463	F:CTGCAAATTTGATGCACATGTGTCTA R:TTGGATCTCATATTCAA ACTTTCAAG	(ATT)19	100-214	M	29	31	0.917	non
satt509	F:GCGCAAGTGGCCAGCTCATCTATT R:GCGCTACCGTGTGGTGGTGTGCTACCT	(ATT)30	119-242	B1	22	32	0.921	non
Satt530	F:CCAAGCGGGTGAAGAGGTTTTT R:CATGCATATTGACTTCATTATT	(ATT)12	201-279	N	25	34	0.916	non
satt555	F:GCGGTTGGCTTTGATGATGT R:TTACCGCATGTTCTTGGACTA	(ATT)13	234-312	K	20	33	0.889	non
Satt568	F:CGGACACCGGTCTACTAGGAAAGTAA R:GCGGAATAATCCAATTCAATTTA	(ATT)17	212-275	H	19	28	0.903	non
satt572	F:GCGGAGCATGTAAATCCAGCCTATTGA R:GCGGGCTAACTTATGTTACTAAACAAT	(ATT)14	130-241	A1	27	36	0.934	non
satt581	F:CCAAAGCTGAGCAGCTGATAACT R:CCCTCACTCCTAGATTATTTGTTGT	(ATT)11	130-196	O	16	32	0.870	non
mean					23	34	0.883	

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Table S2 The sampling locality, longitude, latitude, altitude and habitate of 53 wild soybean populations

Pop.	Location	Latitude (N)	Longitude (E)	Altitude (m)	sampling
AF	Anfu county, Jiangxi province	27°23'17"	114°36'06"	85	Seq, SSR
JO	Jianou county, Fujian province	27°01'28"	118°17'34"	126	Seq, SSR
HY	Hengyang county, Hunan province	26°57'43"	112°09'12"	123	Seq, SSR
RY	Ruyuan county, Guangdong province	24°55'12"	113°08'12"	510	Seq, SSR
QZ	Quanzhou county, Guangxi Zhuang province	25°52'21"	110°51'43"	722	Seq, SSR
WC	Wuchang district, Hubei province	30°31'16"	114°23'44"	15	Seq, SSR
XU	Xuanwu district, Jiangsu province	32°02'44"	118°51'39"		Seq, SSR
WQ	Duqing county, Zhejiang province	30°33'00"	119°58'20"	15	Seq, SSR
SC	Shucha county, Anhui province	31°18'51"	117°07'40"	45	Seq, SSR
TB	Tongbai county, Henan province	32°22'12"	113°24'01"	33	Seq, SSR
CK	Chengkou county, Chongqing	31°58'98"	108°40'02"	805	Seq, SSR
YJ	Yinjiang county, Guizhou province	28°00'03"	108°24'36"	458	Seq, SSR
GH	Guanghan city, Sichuan province	30°59'49"	104°20'55"	458	Seq, SSR
CY	Chayu county, Xizang province	27°03'53"	100°50'03"	1685	Seq, SSR
N1	Ninglang county, Yunnan province	28°30'08"	97°00'38"	2600	Seq, SSR
N2	Ninglang county, Yunnan province	28°06'54"	99°51'02"	2550	Seq, SSR
BX	Bingxian county, Shaanxi province	35°02'26"	108°04'39"	835	Seq, SSR
HX	Huixian county, Gansu province	33°53'36"	105°49'33"	1126	Seq, SSR
YY	Youyu county, Shanxi province	40°08'38"	112°20'22"	1279	Seq
LW	Lingwu county, Ningxia province	38°08'44"	106°19'33"	1103	Seq, SSR
WS	Wenshui county, Shaanxi province	37°25'02"	112°01'02"	759	Seq, SSR
YA	Yan'an county, Shaanxi province	36°37'29"	109°27'18"	962	Seq
YL	Yulin city, Shaanxi province	38°16'50"	109°44'18"	1051	Seq, SSR
LS	Linxian county, Shaanxi province	37°56'51"	110°59'15"	948	Seq
YC	Yichuan county, Shaanxi province	36°03'31"	110°11'20"	829	Seq
BJ	Baoji city, Shaanxi province	34°22'04"	107°0'05"	586	Seq
JZ	Jizhou county, Hebei province	37°44'31"	115°41'12"	23	Seq, SSR
WN	Weinan city, Shaanxi province	34°31'01"	109°30'00"	355	Seq
DY	Dongying city, Shandong province	37°34'25"	118°31'27"	6	Seq, SSR
DQ	Wuqing district, Tianjing	39°26'57"	117°14'57"	-6	Seq, SSR

Table S2 continue

Pop.	Location	Latitude (N)	Longitude (E)	Altitude (m)	sampling
XH	Xuanhua county, Hebei province	40 °35′ 34″	115 °01′ 17″	601	Seq, SSR
QH	Qinghuangdao city, Hebei province	39 °48′ 29″	119 °25′ 54″	18	Seq, SSR
YT	Yantai city, Shandong province	37 °28′ 65″	121 °27′ 14″	10	Seq, SSR
LX	Lanxi county, Heilongjiang province	46 °13′ 06″	126 °20′ 16″	139	Seq, SSR
JH	Jiaohe county, Jinlin province	43 °48′ 28″	127 °14′ 15″	126	Seq, SSR
SY	Xinming county, Liaoning province	41 °57′ 19″	122 °51′ 29″	28	Seq, SSR
MD	Mudanjiang city, Heilongjiang province	44 °34′ 07″	129 °36′ 26″	253	Seq
BS	Baishan city, Jilin province	42 °27′ 00″	128 °07′ 44″	701	Seq
KS	Keshan county, Heilongjaing province	48 °17′ 00″	125 °29′ 54″	325	Seq, SSR
QQ	Qiqihaer city, Heilongjiang province	47 °20′ 27″	123 °56′ 24″	304	Seq, SSR
HG	Hegan city, Heilongjiang province	47 °12′ 20″	130 °13′ 46″	213	Seq
DH	Dunhua city, Jilin province	43 °22′ 28″	128 °13′ 36″	495	Seq
HL	Hulin city, Heilongjiang province	42 °02′ 24″	128 °03′ 16″	73	Seq, SSR
J1	Kanagawa, Japan	34 °57′ 33″	137 °08′ 20″	12	Seq, SSR
J2	Tokyo, Japan	34 °49′ 41″	135 °46′ 13″	35	Seq, SSR
J3	Hirakata,Osaka,Japan	34 °48′ 52″	135 °29′ 02″	11	Seq, SSR
J4	Okazaki, Japan	34 °57′ 33″	137 °08′ 20″	37	Seq, SSR
J5	Kyushu University, Fukuoka, Japan	33 °35′ 47″	130 °12′ 55″	48	Seq, SSR
K1	Gangwon-do, South Korea	37 °35′ 15″	128 °24′ 33″	520	SSR
K2	Gangwon-do, South, Korea	37 °54′ 47″	128 °29′ 56″	340	Seq, SSR
K3	Incheon, South Korea	37 °27′ 30″	126 °21′ 53″	11	Seq, SSR
K4	Yeongcheon-si city, Korea	37 °54′ 47″	128 °29′ 56″	102	Seq, SSR
K5	Moonkyeong-si city, Korea	37 °27′ 30″	126 °21′ 53″	77	Seq, SSR