

**Supplementary Table S2.** Monthly distribution of hard ticks obtained at each collection site on Ganghwa-do in 2020 using collection traps

Collection site	Species	Dev'l stage	April	May	June	July	August	September	October	November	Total	
Grassland	<i>H. longicornis</i>	Female	16	132	150	16	0	9	0	0	323	
		Male	15	90	78	5	1	0	0	0	189	
		Nymph	15	419	256	1	2	2	0	0	0	695
		Subtotal	46	641	484	22	3	11	0	0	0	1,207
	<i>H. flava</i>	Female	0	0	0	0	0	0	0	0	0	
		Male	0	0	0	0	0	1	1	0	0	1
		Nymph	0	0	0	0	0	3	3	0	0	3
		Subtotal	0	0	0	0	0	4	4	0	0	4
	<i>Ix. nipponensis</i>	Female	0	0	1	0	0	0	0	0	0	1
		Male	0	0	0	0	0	0	0	0	0	0
		Nymph	0	0	0	0	0	0	0	0	0	0
		Subtotal	0	0	1	0	0	0	0	0	0	1
	Larva	Female	0	0	0	0	0	0	0	0	0	0
		Male	0	0	0	0	0	0	0	0	0	0
		Nymph	0	0	0	0	0	0	0	0	0	0
		Subtotal	0	0	0	0	0	0	0	0	0	0
Grave	<i>H. longicornis</i>	Female	18	99	55	40	12	4	0	0	1	229
		Male	10	73	28	23	6	0	0	0	0	140
		Nymph	113	566	136	3	3	16	0	0	0	837
		Subtotal	141	738	219	66	21	20	0	0	0	1,206
	<i>H. flava</i>	Female	1	0	0	0	0	0	3	8	0	12
		Male	2	0	0	0	3	4	4	10	0	19
		Nymph	0	2	0	0	0	0	8	2	0	12
		Subtotal	3	2	0	0	3	15	20	0	0	43
	<i>Ix. nipponensis</i>	Female	0	0	0	0	0	0	0	0	0	0
		Male	0	0	0	0	0	0	0	0	0	0
		Nymph	0	1	0	0	0	0	0	0	0	1
		Subtotal	0	1	0	0	0	0	0	0	0	1
	Larva	Female	0	1	0	0	0	0	17	0	0	17
		Male	0	0	0	0	0	0	0	0	0	0
		Nymph	0	0	0	0	0	0	0	0	0	0
		Subtotal	0	1	0	0	0	17	0	0	0	17
Copse	<i>H. longicornis</i>	Female	144	741	219	66	24	52	20	1	1,267	
		Male	5	119	0	169	12	0	0	0	6	311
		Nymph	3	60	18	77	1	0	0	0	0	159
		Subtotal	18	221	42	26	1	6	0	0	0	314
	<i>H. flava</i>	Female	26	400	60	272	14	6	0	6	784	
		Male	1	39	0	0	0	2	1	1	0	43
		Nymph	0	0	0	0	1	3	2	2	0	6
		Subtotal	1	39	0	0	1	2	2	1	0	3
	<i>Ix. nipponensis</i>	Female	0	0	0	0	0	0	0	0	0	0
		Male	0	0	0	0	0	0	0	0	0	0
		Nymph	0	0	0	0	0	2	7	4	0	52
		Subtotal	0	0	0	0	0	2	7	4	0	52
	Larva	Female	0	0	0	0	0	0	0	0	0	0
		Male	0	0	0	0	0	0	0	0	0	0
		Nymph	0	0	0	0	0	0	0	0	0	0
		Subtotal	0	0	0	0	0	0	0	0	0	0
	Subtotal	Female	0	0	0	0	1	16	0	0	0	17
		Male	0	0	0	0	1	16	0	0	0	17
		Nymph	0	0	0	0	1	16	0	0	0	17
		Subtotal	0	0	0	0	3	33	0	0	0	36

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Supplementary Table S2. Continued

Collection site	Species	Dev'l stage	April	May	June	July	August	September	October	November	Total	
Mountain road	<i>H. longicornis</i>	Female	8	39	62	88	6	0	0	0	203	
		Male	9	22	15	29	1	0	0	0	76	
		Nymph	10	67	85	15	1	3	0	0	181	
		Subtotal	27	128	162	132	8	3	0	0	460	
	<i>H. flava</i>	Female	0	0	0	0	0	0	1	3	4	
		Male	0	0	0	0	0	0	8	0	0	8
		Nymph	0	0	0	0	0	0	2	0	0	2
		Subtotal	0	0	0	0	0	11	3	0	14	
	<i>Ix. nipponensis</i>	Female	0	0	0	0	0	0	0	0	0	
		Male	0	0	0	0	0	0	0	0	0	0
		Nymph	0	0	0	0	0	0	0	0	0	0
		Subtotal	0	0	0	0	0	0	0	0	0	
		Larva	0	0	0	0	0	5	0	0	5	
		Subtotal	27	128	162	132	8	19	3	0	479	
Total			244	1,949	926	492	51	115	27	7	3,811	